CONCRITE™

Concrite
Pre-mix Concrete EPD

ENVIRONMENTAL PRODUCT DECLARATION

ECO PLATFORM EPD VERIFIED

In accordance with ISO 14025 and EN 15804

EPD Registration Number SP-02335
Issued 28 January 2022 | Valid until 28 January 2027
Geographical Scope: Sydney Region, Southern Highlands Region, Canberra Region

AUSTRALASIA EPD®

Contents

CONCRITE™

Program information and verification

An Environmental Product Declaration (EPD) is a standardised way of quantifying the potential environmental impacts of a product or system. EPDs are produced according to a consistent set of rules – Product Category Rules (PCR) – that define the requirements within a given product category.

These rules are a key part of EPDs, on top of ISO 14025, ISO 14040 and ISO 14044, as they enable transparency and comparability between EPDs. This EPD provides cradle-to-gate environmental indicators for a range of normal class pre-mix concrete products, lower-carbon concrete (e.g. LCHP and LC) and concrete for special applications manufactured by Concrite.

This EPD is verified to be compliant with EN 15804. EPDs of construction products may not be comparable if they do not comply with EN 15804. EPDs within the same product category but from different programs or utilising different PCRs may not be comparable. Concrite, as the EPD owner, has the sole ownership, liability and responsibility for the EPD.

Declaration Owner		
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Program information and verification

EPD Version:	1.0
Reference year for data:	2020-07-01 / 2021-06-30

CEN standard EN 15804 served as the core PCR	
PCR	PCR 2012:01 Construction Products and Construction Services, Version 2.33, 2020-09-18 PCR 2012:01-SUB-PCR-G Concrete and concrete elements, 2020-09-18
PCR review was conducted by	The Technical Committee of the International EPD® System. Chair: Massimo Marino. Contact via info@environdec.com
Independent verification of the declaration and data, according to ISO 14025	☐ EPD process certification (Internal) ☒ EPD verification (External)
Procedure for follow-up of data during EPD validity involved third-party verifier	☐ No ☒ Yes

About Concrite

Concrite has been supplying pre-mix concrete solutions for its customers into NSW and ACT construction projects for over 45 years. Originating in Sutherland Shire on the southern side of Sydney, our independent network covers all markets in Sydney, Southern Highlands, the ACT and Yass. Concrite joined the Boral Group of Companies in 2001.

Concrite supplies pre-mix concrete to all segments of the construction industry including infrastructure, social, commercial and residential construction. Concrite's solutions for our customers are focused on technical excellence and service. We operate a large modern company owned fleet that distribute our products from our batch plant networks covering all of Sydney region, Southern Highlands region, and the ACT.

This EPD covers the majority of the concrete products supplied from Concrite plants in Sydney, Southern Highlands and the ACT.

Sustainability at Concrite

We recognise that our commitment and progress in managing sustainability outcomes is vital to our business and meeting the expectations of our customers.

We strive to:

- Deliver innovative, superior performing and more sustainable products and solutions that respond to a changing world and better meet our customers' needs
- Drive safety performance towards world's best practice and invest in our people to enable them to deliver on our strategy
- Reduce our environmental footprint and build our resilience to climate impacts, and
- Be a socially responsible member of the communities in which we operate.

About Concrite

Technical capability

In recent years, we reshaped our business to respond and adapt to changing commercial, technological, and environmental factors. We have invested in growing our lower carbon concrete products. We are increasing our investment in innovation to enable us to expand our products and solutions that have a lower carbon footprint and thereby positively contribute to an effective transition to a lower carbon economy.

To ensure we remain at the forefront, we constantly improve, develop and refine our products to maintain the high standards customers have come to expect. Concrite maintains an ISO 9001-certified Quality System to ensure we conduct a regular regime of physical properties testing on all materials to certify they:

- Meet Australian Standards in the civil and structural construction industry;
- Comply with applicable legislation, regulations and industry standards;
- Meet project specifications; and
- Allow for continuous improvement.

Concrite laboratory facilities have a quality management system that meets international standards and they are NATA-accredited for construction materials testing.

Geographical scope

Green pins = surrounding plants covered in the EPD

Red pins = plants that are being modelled

Orange pins = our of scope plants

Geographical areas covered by this EPD

The concrete plants considered for this Environmental Product Declaration comprise of those in our Sydney network, the Southern Highlands network in NSW, and Australian Capital Territory. Individual plants were assessed for life cycle assessment, and local surrounding similar raw material sources were included in the datasets. These regions, and modelled plants, including geographically nearby plants are listed in the following location maps.

- **Concrite Auburn Plant**
  Sydney NSW (Alexandria, Auburn, Blacktown, Liverpool, Campbelltown, Kirrawee)
- **Concrite Moss Vale Plant**
  Southern Highlands region in NSW (Picton, Mittagong, Moss Vale)
- **Concrite Yass Plant**
  Canberra and ACT region (Fyshwick, Yass)

Declared products

Products considered for the Concrite environmental product declaration

The products considered for the EPD fall into three broad categories: normal class products, lower carbon concrete products and special concrete products. A brief description of each category is given below, followed by a full list of the products.

1) Normal Class Concrete Products

Normal class concrete products are suitable for general applications and designed to meet the requirements of AS 1379 (Specification and supply of concrete). The normal class concrete products have been grouped according to the cement blend they contain as follows.

Normal Class concrete category	Cementitious type
Normal Class GP blend	General Purpose (GP) cement
Normal Class GP/FA blend	General Purpose (GP) cement and fly ash (FA) – LC30 for this EPD
Normal Class GP/GGBFS blend	General Purpose (GP) cement and ground granulated blast furnace slag (GGBFS) – LC30 for this EPD

2) Lower Carbon Concrete Products

Lower Carbon (LC), Lower Carbon Plus (LCP), and Lower Carbon High Performance (LCHP) concrete products have been designed to have lower portland cement contents and lower embodied carbon contents. The lower carbon concrete products have been further categorised according to their portland cement reduction and their performance, as per the sub categories below.

Lower Carbon Concrete Product	Portland cement reduction*	Typical properties
LC Concrete	≥30%	• Complies with AS 1379
LCP Concrete	≥45%	• Complies with AS 1379 • Improved early age strength and drying shrinkage compared to the LC products
LCHP Concrete	≥50%	• Complies with AS 1379 • Improved early age strength and drying shrinkage compared to the LC and LCP products

*The percentages indicate the typical portland cement reduction against default concrete mixes as defined in the Green Star and IS Rating tools by the Green Building Council of Australia (GBCA) and Infrastructure Sustainability Council (ISC).

Declared products

3) Special concrete products category

Special concrete products category	Application and typical properties
Slag aggregate concrete	· Concrite's slag aggregate concrete increases the pre-consumer recycled content incorporated in N class, Lower Carbon, and Lower Carbon Plus, and can also be incorporated into some S class and LCHP concrete mixes
Stabilised sands and no fines concrete	· For backfilling and bedding and stabilised drainage in civil applications
Transport for NSW B80 concrete	· 40MPa and 50MPa, in both 20mm and 10mm aggregates, class B1 and B2 exposure pumpable concrete.
Tremie placed concrete	· 40 and 50 MPa super workable concrete designed for civil foundations and excavations placed using tremie system
Kerb Machine Concrete	· 25 and 32 MPa concrete designed specifically with very low slump for Kerb machine placement methods
High Strength Concrete	· High strength (50, 65, 80 MPa) concrete designed for vertical structural elements of residential and commercial towers
Burnished finished industrial pavement concrete	· Flexural pavement concrete designed for super flat industrial floors with a burnished finish
Post Tension Concrete	· 40MPa concrete products suitable for the full range of typically used post tensioned application.

LC Concrete

Concrite's LC concrete is a lower carbon concrete product which complies with AS 1379. It contains supplementary cementitious materials to reduce the portland cement content. LC concrete is available with three levels of portland cement reduction (LC30, LC40, LC50). The LC product names indicate the product has a minimum portland cement reduction of 30%, 40% or 50% when compared to the Green Building Council of Australia (GBCA) or the Infrastructure Sustainability Council (ISC) reference case. LC is ideal for general applications where high-performance concrete is not required.

LCP Concrete

Concrite's LC Plus concrete is a lower carbon concrete product which complies with AS 1379. It contains supplementary cementitious materials to reduce the portland cement and the minimum reduction in portland cement compared to the GBCA and ISC reference case is 45%. LCP also has enhanced engineering properties compared to the LC range. The early age strength and drying shrinkage are superior to LC concrete.

Declared products

LCHP Concrete

Concrite's LCHP concrete is a lower carbon concrete product which complies with AS 1379 and has excellent engineering properties. It has a lower portland cement content and a high supplementary cementitious content which results in reduced greenhouse gas emissions. LCHP combines patented ZEP® which gives it good early age strength, lower shrinkage characteristics and excellent durability characteristics. An overview of the sustainability, durability, engineering and architectural properties are given below.

Lower Carbon

- LCHP has a lower portland cement content and is suitable for projects seeking to maximise the number of green star points from concrete.
- LCHP has a lower carbon content and is suitable for projects seeking compliance with the Green Building Council of Australia (GBCA) or the Infrastructure Sustainability Council (ISC).

Workability

- LCHP can be placed, pumped and finished like conventional concrete

Superior Engineering properties

- LCHP will achieve early-age strength equivalent to conventional concrete mixes with higher portland cement content (e.g post-tensioned and precast concrete).
- LCHP has 20 percent greater flexural strength compared to conventional concrete of the same grade.
- LCHP achieves up to 50 percent reduction in shrinkage when compared to conventional sustainable concrete mixes. The lower shrinkage of LCHP will allow for more engineering options such as the design of larger slabs with fewer joints.

Superior Durability

- LCHP provides improved durability, through greater protection to steel reinforcement against chloride induced corrosion.
- LCHP has improved sulphate and acid resistance properties.
- LCHP mitigates the potential expansion due to alkali aggregate reactivity.

Architectural Presence

- LCHP can achieve a range of architectural benefits because of its off-form finish and lighter colour.
- LCHP's lighter colour will enhance the use of colour oxides.

Pre-mix concrete production

Concrete production is the process of combining water, aggregates, cementitious binders and additives. These different 'ingredients' are mixed at a specialised facility known as a 'batching' plant.

A batching plant stores the ingredients in cement silos, aggregate bins and admixture tanks.

The plants use calibrated weigh scales and flow meters to accurately weigh the ingredients which are then mixed in a mixer compliant with item C3 of AS 1379. Most concrete plants mix the concrete in a transit mixer (concrete truck) which then delivers the concrete to the project.

Depending on the proposed application of the final product, the concrete may contain other ingredients such as colour oxides and fibres and the production process may include heaters or chillers. Concrete production is time-sensitive, once the ingredients are mixed, workers must put the concrete in place before it loses workability.

Cradle-to-gate life cycle

This EPD covers the cradle-to-gate life cycle stages (A1-A3), as per diagram below. Downstream stages have not been included.

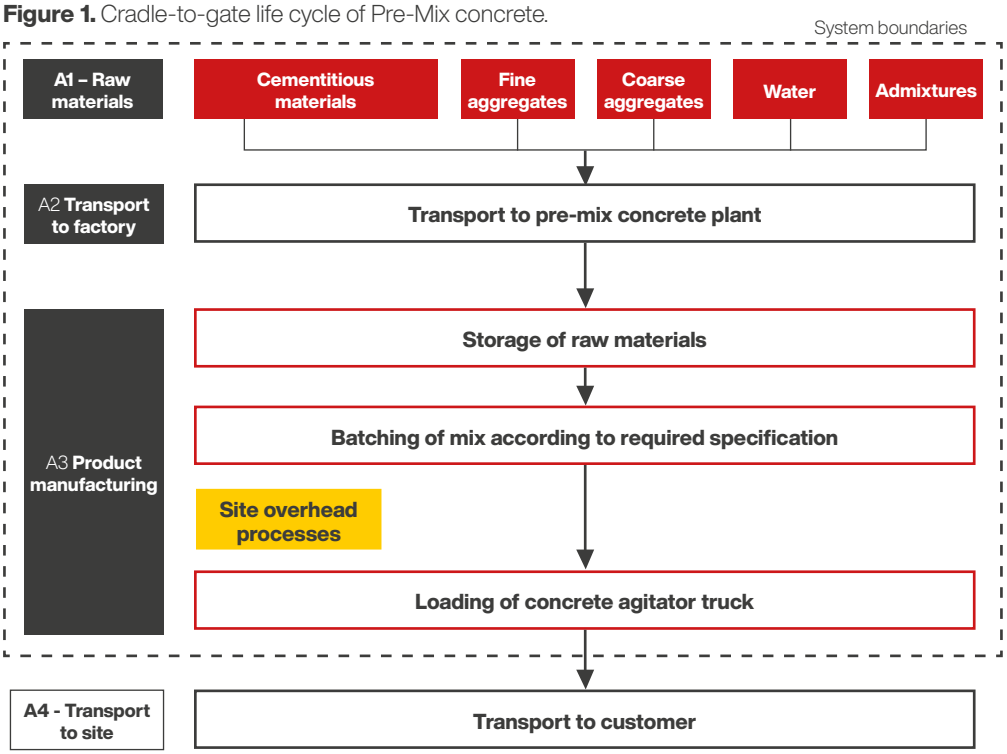
Table 1: Scope of EPD

Product Stage			Construction Stage		Use Stage							End-of-life Stage				Benefits beyond system boundary
RAW MATERIAL SUPPLY	TRANSPORT	MANUFACTURING	TRANSPORT	CONSTRUCTION-INSTALLATION PROCESS	USE	MAINTENANCE	REPAIR	REPLACEMENT	REFURBISHMENT	OPERATIONAL ENERGY USE	OPERATIONAL WATER USE	DECONSTRUCTION/DEMOLITION	TRANSPORT	WASTE PROCESSING	DISPOSAL	REUSE, RECOVERY, RECYCLING POTENTIAL
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
			Scenario		Scenario							Scenario				
✔	✔	✔	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**

✔ = module is included in this study MND = module is not declared*

* When a module is not accounted for, the stage is marked with "MND" (Module Not Declared). MND is used when we cannot define a typical scenario.

Figure 1. Cradle-to-gate life cycle of Pre-Mix concrete.



Cradle-to-gate life cycle

Raw Material Stage A1

All raw materials used in the production of Concrite's normal class concrete, lower carbon concrete and special concrete products comply with the following standards as required by AS 3600 Concrete Structures (SA 2018) & AS 1379 Specification and Supply of Concrete (SA 2007/R2017):

- AS/NZS 3972: General purpose and blended cements (SA 2010)
- AS 3582.1 Supplementary cementitious materials
- Part 1: Fly Ash (SA 2016)
- AS 3582.2 Supplementary cementitious materials
- Part 2: Slag - Ground granulated blast furnace (SA 2016)
- AS 2758.1 Aggregates and rock for engineering purposes
- Part 1: Concrete Aggregates (SA 2014)
- AS 1478.1 Chemical admixtures for concrete, mortar and grout (SA 2000).

Transportation Stage A2

Raw materials are typically transported to our sites via a combination of articulated trucks and by train. Coarse aggregates, manufactured sands and natural sands are sourced from the local network surrounding the region of quarries, as well as other third-party quarries. Shrinkage Ltd Cement (GP), slag cement and ZEP® slag cement is supplied from cement facilities based in Berrima and Maldon in NSW's Southern Highlands. Fly ash is sourced from the power stations at Eraring, Mount Piper and Bayswater.

Manufacturing Stage A3

The typical manufacturing process of Concrite's normal class concrete, lower carbon concrete and special concrete products is by mixing concrete constituents comprising of cement, supplementary cementitious materials (SCM) (AS 3972/AS 3582.1,2), and fine/coarse aggregates (AS 2758.1), plus admixtures/additives (AS 1478.1) and water (AS 1379) directly in the truck referred to as the dry batch method, or in selected locations pre-mixing in a wet mix fashion, before delivery by agitator truck.

The entire process is covered under AS 1379 Specification and Supply of concrete and verified by third party under ISO9001. This manufacturing stage (A3) includes activities associated with sourcing and delivery of individual concrete constituents, up to the point of mixing at the batch plant, but not including delivery and placement of concrete at the project location. This is typically described as the Cradle (A1) to Gate (A3) life cycle boundary.

Cradle-to-gate life cycle

Background data

Concrite has supplied primary data from three concrete production sites (Auburn, Moss Vale, and Yass). The LCA shows that these sites are representative for the three regions in NSW/ACT supplied by Concrite. Data from quarries and cement production facilities have been provided by suppliers, or sourced from the AusLCI shadow database where supplier data were not available. Data for admixtures have been sourced from EPDs published in December 2015 by EFCA (European Federation of Concrete Admixtures Associations) (EFCA 2015a-e). Background data (e.g. for energy and transport processes, blast furnace slag and fly ash) have predominantly been sourced from AusLCI and the AusLCI shadow database.

Our concrete production data have been collected for FY21 (2020/07/01 to 2021/06/30). Concrite's quarry and cement supply chain production data have been collected for calendar year 2018. The vast majority of the environmental profiles of our products are based on life cycle data that are less than five years old. Background data used is less than 10 years old.

Methodological choices have been applied in line with EN 15804 (CEN 2013); deviations have been recorded.

Representative plants in each region

Concrite operates 11 concrete plants in New South Wales and the Australian Capital Territory. This EPD covers a sub-section of our concrete plants located in three key regions:

1. Auburn for Sydney (NSW)
2. Moss Vale for Southern Highlands (NSW)
3. Yass for the Canberra region (ACT)

Our background LCA report shows that a single plant is representative for surrounding plants that have similar supply chains and mix designs.

Life Cycle Assessment (LCA) Methodology

Allocation

The key material production processes that require allocation are:

- **Pre-mix concrete:** Concrite manufactures a range of pre-mix concrete products at its sites. At each manufacturing site, energy use for concrete production has been allocated to the products based on a volume basis (total m^3 of pre-mix concrete products).
- **Cementitious binders:** Concrite purchases cement produced from clinker and manufactured in Berrima and Maldon cement facilities in NSW. Raw materials have been modelled based on actual product compositions and supply chains. Energy use and process emissions for clinker production have been attributed to clinker and off-white clinker based on their mass. Energy use for cementitious material production (milling) has been attributed to all co-products based on their mass.
- **Aggregates:** aggregates are produced through crushing of rock, which is graded in different sizes. The energy required for the crushing and screening does not differentiate between products. Therefore, aggregate production (including manufactured sand) has been allocated based on the mass of product.
- **Slag aggregates:** Slag is a by-product from steel-making. We have used the AusLCI data for BFS ("blast furnace slag allocation, at steel plant/AU U"), which contain impacts from pig iron production allocated to blast furnace slag. No further drying or milling are relevant for slag aggregates.
- **BFS:** blast furnace slag (BFS) is a by-product from steel-making. We have used the AusLCI data for BFS ("blast furnace slag allocation, at steel plant/AU U"), which contain impacts from pig iron production allocated to blast furnace slag. As drying and grinding of BFS occurs at the Maldon Cement facility, we have used Maldon's energy data for these processes, rather than the default AusLCI data.
- **Fly ash:** fly ash is a by-product from coal-fired power plants. We have used the AusLCI data for fly ash, in which all environmental impacts of the power plant are allocated to the main product: electricity. Fly ash has only received the burdens of transport to our sites.
- The allocation assumptions were checked using sensitivity analysis, which showed that the allocation of fly ash can have an impact on the LCA results if impacts of electricity production are assigned to fly ash.

Cut-off Criteria

- The contribution of capital goods (production equipment and infrastructure) and personnel is outside the scope of the LCA, in line with the PCR (Environdec 2020a).
- The amount of packaging used for admixtures is well below the materiality cut-off. Nonetheless, packaging materials and quantities are included in the admixture EPD data.

Key Assumptions

- Admixture data are based on generic EPDs that are valid for a range of different chemicals, including the admixtures used by Concrite. No EPD has been published for Viscosity Modifying Admixtures (VMA); we have used an average of the five admixture EPDs published by EFCA as a proxy.
- Fly ash is considered a by-product of electricity generation that comes without prior environmental impacts. This allocation decision can have a significant effect on the environmental profile of products that use fly ash.
- Blast furnace slag receives some environmental impacts from pig iron production. This allocation decision has an effect on the environmental profile of products that use ZEP® cement and/or slag cement .
- Water consumption is not measured consistently across quarries. We have used AusLCI water consumption data per tonne of coarse and fine aggregates instead.

Product compositions

Content declaration

Table 2. Concrite product compositions

Constituents (% by weight)	Normal Class GP blend	LC Concrete	Slag aggregate LC Concrete	LCP* Concrete
General Purpose cement	10-21%	4-18%	4-18%	7-15%
Ground granulated blast furnace slag	0-2%	0-8%	0-8%	2-8%
Fly ash	–	3-6%	4-6%	1-3%
Silica fume	–	–	–	–
Coarse aggregate	40-44%	36-44%	19-36%	39-45%
Slag Aggregate	–	–	7–24%	–
Manufactured sand	19-39%	18-38%	16-27%	17-27%
Natural sand	0-13%	0-14%	6-12%	7-12%
Admixtures	<0.15%	<0.3%	<0.15%	<0.3%
Water	6-9%	6-9%	6-9%	6-9%

Table 3. Concrite product composition (Continued)

Constituents (% by weight)	LCHP* Concrete	TfNSW	Special
General Purpose cement	6-13%	8-18%	3-18%
Ground granulated blast furnace slag	3-9%	0-7%	0-7%
Fly ash	0-3%	4-6%	0-6%
Silica fume	–	–	–
Coarse aggregate	42-45%	41-48%	0-82%
Manufactured sand	17-27%	14-20%	0-85%
Natural sand	7-12%	6-12%	0-61%
Admixtures	<0.2%	<0.2%	<0.4%
Water	6-9%	6-9%	0-9%

The products as supplied are non-hazardous. The products included in this EPD do not contain any substances of very high concern as defined by European REACH regulation in concentrations >0.1% (m/m). *May include Zep® technology

Declared Unit

The background LCA serves as the foundation for this EPD. An LCA analyses the environmental processes in the value chain of a product. It provides a comprehensive evaluation of all upstream (and sometimes downstream) material and energy inputs and outputs. The results are provided for a range of environmental impact categories, in line with EN 15804 (CEN 2013).

Pre-mix concrete is available in various strength grades and with characteristics that are specifically designed for each application. The declared unit that covers all of the products is: 1 cubic metre (m^3) of pre-mix concrete (as ordered by client) with a given strength grade and identifying characteristics. This declared unit has been adapted from the sub-PCR (Environdec 2020b).

All results are presented per declared unit and cover the A1-A3 life cycle stages (cradle-to-gate).

The product code for pre-mix concrete is UN CPC 375 (Articles of concrete, cement and plaster) and ANZSIC 20330 (Concrete – ready mixed – except dry mix).

Environmental indicators

Table 4. Impact categories included in this assessment

Impact category	Acronym	Unit
Global Warming Potential	GWP	kg CO_2 equivalents
Ozone Depletion Potential	ODP	kg CFC-11 equivalents
Acidification Potential of soil and water	AP	kg SO_2 equivalents
Eutrophication Potential	EP	kg PO_4^{3-} equivalents
Photochemical Ozone Creation Potential	POCP	kg C_2H_4 equivalents
Abiotic Depletion Potential for Mineral Elements	ADPE	kg Sb equivalents
Abiotic Depletion Potential for Fossil Fuels	ADPF	MJ

Table 5: Parameters describing resource use, waste and output flows

Resource use	Acronym	Unit
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	PERE	MJ_{NCV}
Use of renewable primary energy resources used as raw materials	PERM	MJ_{NCV}
Total use of renewable primary energy resources	PERT	MJ_{NCV}
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	PENRE	MJ_{NCV}
Use of non-renewable primary energy resources used as raw materials	PENRM	MJ_{NCV}
Total use of non-renewable primary energy resources	PENRT	MJ_{NCV}
Use of secondary material	SM	kg
Use of renewable secondary fuels	RSF	MJ_{NCV}
Use of non-renewable secondary fuels	NRSF	MJ_{NCV}
Use of net fresh water	FW	m^3
Waste categories		
Hazardous waste disposed	HWD	kg
Non-hazardous waste disposed	NHWD	kg
Radioactive waste disposed	RWD	kg
Output flows		
Components for re-use	CRU	kg
Materials for recycling	MFR	kg
Materials for energy recovery	MER	kg
Exported energy	EE	MJ

Environmental profiles

The cradle-to-gate (module A1-A3) environmental profiles and environmental parameters of each product group are expressed per m^3 of pre-mix concrete (volume as ordered by the client).

Limitations

The results of this study and the EPD are valid for Concrite products only. Products from other manufacturers will likely have different impacts due to differences in mix designs, supply chains and manufacturing processes. The main limitations of the LCA results are found in the parameter results, which are highly dependent on background data.

The environmental parameters are based on the life cycle inventory. There is some ambiguity around their presentation, and issues to note include:

- Hazardous waste disposal (HWD) is derived from background LCI data.
- Non-hazardous waste disposal (NHWD) is derived from background LCI data.
- Radioactive waste disposal (RWD) is derived from background LCI data. Radioactive waste is only coming through the EPD data for admixtures, unless the life cycle contains clinker manufactured overseas.

Variation (A1-A3) per impact category

The results of the LCA clearly showed that the GHG emissions of the concrete products are not materially different between the manufacturing sites. In the Sydney Metro region, products from all our plants are within +/-10% of the declared values. In the Canberra/ACT region, the results for the non-declared plant (Fyshwick) are lower, but generally within 10%. The exception is stabilised sand, for which results are up to 25% lower (than Yass) for ozone layer depletion (ODP) and photochemical oxidant creation (POCP), caused by a reduction in impacts from aggregate transport. In the Southern Highlands region, the variations in the LCA results are up to 25% higher (than Moss Vale) for ozone layer depletion (ODP) and photochemical oxidant creation (POCP), caused by an increase in impacts from raw materials transport. The acidification (AP) and eutrophication (EP) indicators may be larger by up to 15%.

The fact that relatively minor changes in the supply chain have such an impact on these indicators, suggests that the emissions are coming from a low (absolute) base.

We believe it is reasonable to use a single plant per region as representative for the wider region.

Water management

Water is a valuable resource and good quality fresh water is essential to our concrete. We use water in manufacturing, washing of concrete mixers, for dust suppression, aggregate moisture control, and for general amenities. Our concrete operations capture and store mixer washout water and use all this recycled water in our concrete manufacturing process.

Our concrete operations are setup to capture rainwater into our recycled water systems, ensuring we take advantage of all opportunities available to minimise the use of potable water.

Product table list Sydney region

Table No. 1 and 2
LC50 20MPa
LC50 25MPa
LC50 32MPa
LC50 40MPa
LC50 50MPa
LC50 65MPa
LC50 80MPa

Table No. 3 and 4
LC40 20MPa
LC40 25MPa
LC40 32MPa
LC40 40MPa
LC40 50MPa

Table No. 5 and 6
LC30 20MPa
LC30 25MPa
LC30 32MPa
LC30 40MPa
LC30 50MPa

Table No. 7 and 8
LCHP 20MPa
LCHP 25MPa
LCHP 32MPa
LCHP 40MPa
LCHP 50MPa
LCHP 50PRECAST

Table No. 9 and 10
LCP 20MPa
LCP 25MPa
LCP 32MPa
LCP 40MPa
LCP 50MPa
LCP 65MPa

Table No. 11 and 12
NORMAL CLASS GP BLEND 20MPa
NORMAL CLASS GP BLEND 25MPa
NORMAL CLASS GP BLEND 32MPa
NORMAL CLASS GP BLEND 40MPa
NORMAL CLASS GP BLEND 50MPa

Table No. 13 and 14
BURNISHED MIX WITHOUT STEEL FIBRES
HIGH SLUMP 50MPA
HIGH STRENGTH 65MPA
HIGH STRENGTH 80MPA
KERB MACHINE 25MPA 10MM
KERB MACHINE 32MPA 10MM

Table No. 15 and 16
POST TENSIONED 40MPA 22@3
POST TENSIONED 40MPA 22@4
POST TENSIONED 40MPA 22@5
TREMIE 40MPA
TREMIE 50MPA

Table No. 17 and 18
TfNSW B80 40MPA 20MM PUMP B1 EXPOSURE
TfNSW B80 40MPA 20MM PUMP B2 EXPOSURE
TfNSW B80 50MPA 10MM PUMP B2 EXPOSURE
TfNSW B80 50MPA 20MM PUMP B1 EXPOSURE
TfNSW B80 50MPA 20MM PUMP B2 EXPOSURE

Table No. 19 and 20
NO FINES 6:1
STABILISED SAND 14:1
STABILISED SAND 4:1
STABILISED SAND 8:1

Table No. 21 and 22
SLAG AGG CONCRETE MIX, LC50 20MPa
SLAG AGG CONCRETE MIX, LC50 25MPa
SLAG AGG CONCRETE MIX, LC50 32MPa
SLAG AGG CONCRETE MIX, LC50 40MPa
SLAG AGG CONCRETE MIX, LC50 50MPa

Table No. 23 and 24
SLAG AGG CONCRETE MIX, LC40 20MPa
SLAG AGG CONCRETE MIX, LC40 25MPa
SLAG AGG CONCRETE MIX, LC40 32MPa
SLAG AGG CONCRETE MIX, LC40 40MPa
SLAG AGG CONCRETE MIX, LC40 50MPa

Table No. 25 and 26
SLAG AGG CONCRETE MIX, LC30 20MPa
SLAG AGG CONCRETE MIX, LC30 25MPa
SLAG AGG CONCRETE MIX, LC30 32MPa
SLAG AGG CONCRETE MIX, LC30 40MPa
SLAG AGG CONCRETE MIX, LC30 50MPa

Sydney Region

Table 1. Environmental profiles (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Indicator	Unit	LC50 20MPa	LC50 25MPa	LC50 32MPa	LC50 40MPa	LC50 50MPa	LC50 65MPa	LC50 80MPa
GWP	**kg CO_2 eq**	**149**	**164**	**187**	**219**	**272**	**277**	**301**
ODP	kg CFC11 eq	3.36E-06	3.42E-06	3.52E-06	3.66E-06	3.88E-06	3.95E-06	4.09E-06
AP	kg SO_2 eq	0.311	0.329	0.358	0.398	0.466	0.479	0.512
EP	kg PO_4^{3-} eq	0.0698	0.0740	0.0809	0.0905	0.107	0.110	0.118
POCP	kg C_2H_4 eq	0.0326	0.0337	0.0356	0.0383	0.0428	0.0445	0.0470
ADPE	kg Sb eq	3.84E-06	4.25E-06	4.73E-06	5.39E-06	7.52E-06	1.37E-05	1.55E-05
ADPF	MJ_{NCV}	1140	1230	1370	1560	1890	1980	2150

Table 2. Environmental parameters (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Parameter	Unit	LC50 20MPa	LC50 25MPa	LC50 32MPa	LC50 40MPa	LC50 50MPa	LC50 65MPa	LC50 80MPa
PERE	MJ_{NCV}	**2.63E+01**	**2.85E+01**	**3.19E+01**	**3.66E+01**	**4.56E+01**	**5.28E+01**	**5.78E+01**
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E-01	1.14E-01
PERT	MJ_{NCV}	2.63E+01	2.85E+01	3.19E+01	3.66E+01	4.56E+01	5.29E+01	5.79E+01
PENRE	MJ_{NCV}	1.18E+03	1.26E+03	1.40E+03	1.60E+03	1.93E+03	2.02E+03	2.18E+03
PENRM	MJ_{NCV}	5.55E+00	6.22E+00	6.98E+00	8.03E+00	1.40E+01	2.72E+01	3.19E+01
PENRT	MJ_{NCV}	1.18E+03	1.27E+03	1.41E+03	1.60E+03	1.95E+03	2.04E+03	2.21E+03
SM	kg	1.84E+02	2.04E+02	2.21E+02	2.44E+02	2.92E+02	2.71E+02	3.18E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.16E+00	3.10E+00	3.06E+00	3.02E+00	2.90E+00	3.05E+00	2.99E+00
HWD	kg	7.69E-06	8.62E-06	9.69E-06	1.11E-05	1.82E-05	4.55E-05	5.19E-05
NHWD	kg	8.74E-01	9.64E-01	1.08E+00	1.24E+00	1.54E+00	2.22E+00	2.43E+00
RWD	kg	1.44E-03	1.62E-03	1.82E-03	2.09E-03	3.35E-03	6.32E-03	7.31E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 3. Environmental profiles (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Indicator	Unit	LC40 20MPa	LC40 25MPa	LC40 32MPa	LC40 40MPa	LC40 50MPa
GWP	**kg CO_2 eq**	**171**	**187**	**215**	**253**	**314**
ODP	kg CFC11 eq	3.42E-06	3.49E-06	3.59E-06	3.75E-06	3.99E-06
AP	kg SO_2 eq	0.335	0.355	0.389	0.436	0.512
EP	kg PO_4^{3-} eq	0.0758	0.0807	0.0888	0.100	0.118
POCP	kg C_2H_4 eq	0.0337	0.0351	0.0371	0.0401	0.0447
ADPE	kg Sb eq	3.87E-06	4.28E-06	4.77E-06	5.44E-06	6.64E-06
ADPF	MJ_{NCV}	1230	1330	1480	1700	2050

Table 4. Environmental parameters (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Parameter	Unit	LC40 20MPa	LC40 25MPa	LC40 32MPa	LC40 40MPa	LC40 50MPa
PERE	MJ_{NCV}	2.83E+01	3.06E+01	3.44E+01	3.97E+01	4.83E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.83E+01	3.06E+01	3.44E+01	3.97E+01	4.83E+01
PENRE	MJ_{NCV}	1.27E+03	1.36E+03	1.52E+03	1.74E+03	2.09E+03
PENRM	MJ_{NCV}	5.55E+00	6.22E+00	6.98E+00	8.03E+00	9.94E+00
PENRT	MJ_{NCV}	1.27E+03	1.37E+03	1.53E+03	1.75E+03	2.10E+03
SM	kg	1.57E+02	1.74E+02	1.84E+02	2.00E+02	2.34E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.18E+00	3.14E+00	3.08E+00	3.03E+00	2.91E+00
HWD	kg	7.69E-06	8.62E-06	9.69E-06	1.11E-05	1.38E-05
NHWD	kg	8.72E-01	9.61E-01	1.08E+00	1.24E+00	1.51E+00
RWD	kg	1.44E-03	1.62E-03	1.82E-03	2.09E-03	2.59E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 5. Environmental profiles (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Indicator	Unit	LC30 20MPa	LC30 25MPa	LC30 32MPa	LC30 40MPa	LC30 50MPa
GWP	**kg CO_2 eq**	**213**	**240**	**274**	**326**	**395**
ODP	kg CFC11 eq	3.54E-06	3.65E-06	3.72E-06	3.93E-06	4.17E-06
AP	kg SO_2 eq	0.384	0.415	0.454	0.518	0.600
EP	kg PO_4^{3-} eq	0.0882	0.0958	0.105	0.121	0.141
POCP	kg C_2H_4 eq	0.0361	0.0380	0.0401	0.0440	0.0488
ADPE	kg Sb eq	3.94E-06	4.36E-06	5.01E-06	5.65E-06	6.74E-06
ADPF	MJ_{NCV}	1420	1560	1740	2010	2380

Table 6. Environmental parameters (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Parameter	Unit	LC30 20MPa	LC30 25MPa	LC30 32MPa	LC30 40MPa	LC30 50MPa
PERE	MJ_{NCV}	3.25E+01	3.58E+01	4.03E+01	4.69E+01	5.58E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.25E+01	3.58E+01	4.03E+01	4.69E+01	5.58E+01
PENRE	MJ_{NCV}	1.46E+03	1.60E+03	1.78E+03	2.06E+03	2.43E+03
PENRM	MJ_{NCV}	5.55E+00	6.22E+00	7.27E+00	8.22E+00	9.94E+00
PENRT	MJ_{NCV}	1.46E+03	1.60E+03	1.79E+03	2.07E+03	2.44E+03
SM	kg	1.00E+02	1.11E+02	1.13E+02	1.25E+02	1.38E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.24E+00	3.19E+00	3.10E+00	3.03E+00	2.92E+00
HWD	kg	7.69E-06	8.62E-06	1.01E-05	1.14E-05	1.38E-05
NHWD	kg	8.76E-01	9.70E-01	1.11E+00	1.26E+00	1.51E+00
RWD	kg	1.44E-03	1.62E-03	1.89E-03	2.14E-03	2.59E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 7. Environmental profiles (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Indicator	Unit	LCHP 20MPa	LCHP 25MPa	LCHP 32MPa	LCHP 40MPa	LCHP 50MPa	LCHP 50PreCast
GWP	**kg CO_2 eq**	**185**	**200**	**224**	**267**	**326**	**339**
ODP	kg CFC11 eq	3.52E-06	3.59E-06	3.68E-06	3.87E-06	4.16E-06	4.32E-06
AP	kg SO_2 eq	0.372	0.392	0.423	0.482	0.565	0.595
EP	kg PO_4^{3-} eq	0.0811	0.0856	0.0926	0.106	0.124	0.130
POCP	kg C_2H_4 eq	0.0360	0.0373	0.0392	0.0429	0.0484	0.0508
ADPE	kg Sb eq	4.46E-06	4.81E-06	5.30E-06	7.12E-06	8.88E-06	1.15E-05
ADPF	MJ_{NCV}	1370	1460	1590	1850	2220	2350

Table 8. Environmental parameters (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Parameter	Unit	LCHP 20MPa	LCHP 25MPa	LCHP 32MPa	LCHP 40MPa	LCHP 50MPa	LCHP 50PreCast
PERE	MJ_{NCV}	3.25E+01	3.49E+01	3.83E+01	4.51E+01	5.46E+01	6.06E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.21E-02
PERT	MJ_{NCV}	3.25E+01	3.49E+01	3.83E+01	4.51E+01	5.46E+01	6.07E+01
PENRE	MJ_{NCV}	1.40E+03	1.50E+03	1.63E+03	1.89E+03	2.26E+03	2.39E+03
PENRM	MJ_{NCV}	6.02E+00	6.54E+00	7.27E+00	9.07E+00	1.15E+01	1.57E+01
PENRT	MJ_{NCV}	1.41E+03	1.50E+03	1.64E+03	1.90E+03	2.28E+03	2.41E+03
SM	kg	1.46E+02	1.56E+02	1.67E+02	1.88E+02	2.40E+02	2.07E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.24E+00	3.22E+00	3.18E+00	3.13E+00	3.03E+00	3.26E+00
HWD	kg	8.55E-06	9.29E-06	1.03E-05	1.35E-05	1.70E-05	3.00E-05
NHWD	kg	1.04E+00	1.13E+00	1.24E+00	1.68E+00	2.10E+00	2.40E+00
RWD	kg	1.61E-03	1.75E-03	1.95E-03	2.57E-03	3.25E-03	4.25E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 9. Environmental profiles (A1-A3), lower carbon concrete, Sydney region (NSW), per m^3

Indicator	Unit	LCP 20MPa	LCP 25MPa	LCP 32MPa	LCP 40MPa	LCP 50MPa	LCP 65MPa
GWP	**kg CO_2 eq**	**194**	**212**	**239**	**280**	**348**	**357**
ODP	kg CFC11 eq	3.51E-06	3.58E-06	3.67E-06	3.86E-06	4.18E-06	4.34E-06
AP	kg SO_2 eq	0.375	0.398	0.430	0.486	0.579	0.612
EP	kg PO_4^{3-} eq	0.0831	0.0885	0.0962	0.109	0.130	0.135
POCP	kg C_2H_4 eq	0.0359	0.0372	0.0391	0.0426	0.0486	0.0524
ADPE	kg Sb eq	3.86E-06	4.17E-06	4.60E-06	5.35E-06	6.81E-06	1.97E-05
ADPF	MJ_{NCV}	1380	1480	1630	1870	2280	2480

Table 10. Environmental parameters (A1-A3), lower carbon concrete, Sydney (NSW), per m3

Parameter	Unit	LCP 20MPa	LCP 25MPa	LCP 32MPa	LCP 40MPa	LCP 50MPa	LCP 65MPa
PERE	MJ_{NCV}	3.23E+01	3.49E+01	3.85E+01	4.45E+01	5.49E+01	6.90E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.07E-01
PERT	MJ_{NCV}	3.23E+01	3.49E+01	3.85E+01	4.45E+01	5.49E+01	6.92E+01
PENRE	MJ_{NCV}	1.42E+03	1.52E+03	1.67E+03	1.91E+03	2.33E+03	2.52E+03
PENRM	MJ_{NCV}	5.35E+00	5.85E+00	6.50E+00	7.65E+00	9.94E+00	2.58E+01
PENRT	MJ_{NCV}	1.42E+03	1.53E+03	1.67E+03	1.92E+03	2.34E+03	2.55E+03
SM	kg	1.22E+02	1.27E+02	1.33E+02	1.49E+02	2.01E+02	2.40E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.25E+00	3.22E+00	3.17E+00	3.13E+00	3.02E+00	3.16E+00
HWD	kg	7.43E-06	8.11E-06	9.02E-06	1.06E-05	1.38E-05	5.94E-05
NHWD	kg	9.01E-01	9.73E-01	1.07E+00	1.25E+00	1.59E+00	3.75E+00
RWD	kg	1.39E-03	1.52E-03	1.69E-03	1.99E-03	2.59E-03	7.18E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 11. Environmental profiles (A1-A3), normal class concrete, Sydney (NSW), per m^3

Indicator	Unit	Normal class GP blend 20MPA	Normal class GP blend 25MPA	Normal class GP blend 32MPA	Normal class GP blend 40MPA	Normal class GP blend 50MPA
GWP	**kg CO_2 eq**	**249**	**273**	**297**	**341**	**435**
ODP	kg CFC11 eq	3.54E-06	3.60E-06	3.69E-06	3.83E-06	4.18E-06
AP	kg SO_2 eq	0.423	0.452	0.481	0.535	0.648
EP	kg PO_4^{3-} eq	0.0979	0.105	0.112	0.125	0.152
POCP	kg C_2H_4 eq	0.0376	0.0392	0.0409	0.0440	0.0507
ADPE	kg Sb eq	4.20E-06	5.08E-06	5.30E-06	6.38E-06	7.48E-06
ADPF	MJ_{NCV}	1610	1740	1870	2110	2610

Table 12. Environmental parameters (A1-A3), normal class concrete, Sydney region (NSW), per m^3

Parameter	Unit	Normal class GP blend 20MPA	Normal class GP blend 25MPA	Normal class GP blend 32MPA	Normal class GP blend 40MPA	Normal class GP blend 50MPA
PERE	MJ_{NCV}	3.73E+01	4.09E+01	4.38E+01	4.97E+01	6.18E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.73E+01	4.09E+01	4.38E+01	4.97E+01	6.18E+01
PENRE	MJ_{NCV}	1.65E+03	1.79E+03	1.91E+03	2.16E+03	2.67E+03
PENRM	MJ_{NCV}	4.97E+00	6.72E+00	6.31E+00	7.46E+00	9.37E+00
PENRT	MJ_{NCV}	1.65E+03	1.79E+03	1.92E+03	2.16E+03	2.67E+03
SM	kg	2.87E+01	3.16E+01	3.55E+01	4.11E+01	5.35E+01
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.24E+00	3.19E+00	3.16E+00	3.08E+00	2.97E+00
HWD	kg	7.37E-06	9.65E-06	9.46E-06	1.14E-05	1.39E-05
NHWD	kg	1.02E+00	1.18E+00	1.28E+00	1.55E+00	1.80E+00
RWD	kg	1.40E-03	1.83E-03	1.81E-03	2.19E-03	2.65E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 13. Environmental profiles (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Indicator	Unit	BURNISHED MIX WITHOUT STEEL FIBRES	HIGH SLUMP 50MPA	HIGH STRENGTH 65MPA	HIGH STRENGTH 80MPA	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
GWP	**kg CO_2 eq**	**342**	**377**	**400**	**413**	**162**	**180**
ODP	kg CFC11 eq	3.91E-06	4.02E-06	4.19E-06	4.20E-06	3.59E-06	3.67E-06
AP	kg SO_2 eq	0.529	0.580	0.615	0.639	0.331	0.353
EP	kg PO_4^{3-} eq	0.125	0.136	0.144	0.148	0.0740	0.0793
POCP	kg C_2H_4 eq	0.0442	0.0478	0.0502	0.0519	0.0351	0.0366
ADPE	kg Sb eq	2.96E-06	1.12E-05	1.46E-05	2.28E-05	4.38E-06	4.89E-06
ADPF	MJ_{NCV}	2080	2340	2460	2580	1230	1340

Table 14. Environmental parameters (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Parameter	Unit	BURNISHED MIX WITHOUT STEEL FIBRES	HIGH SLUMP 50MPA	HIGH STRENGTH 65MPA	HIGH STRENGTH 80MPA	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
PERE	MJ_{NCV}	4.79E+01	5.80E+01	6.33E+01	7.08E+01	2.79E+01	3.06E+01
PERM	MJ_{NCV}	0.00E+00	6.73E-02	1.25E-01	2.16E-01	0.00E+00	0.00E+00
PERT	MJ_{NCV}	4.79E+01	5.80E+01	6.34E+01	7.11E+01	2.79E+01	3.06E+01
PENRE	MJ_{NCV}	2.13E+03	2.38E+03	2.51E+03	2.62E+03	1.27E+03	1.38E+03
PENRM	MJ_{NCV}	8.41E+00	1.52E+01	1.90E+01	2.75E+01	6.50E+00	7.27E+00
PENRT	MJ_{NCV}	2.14E+03	2.40E+03	2.53E+03	2.65E+03	1.27E+03	1.38E+03
SM	kg	1.05E+02	1.70E+02	1.17E+02	1.18E+02	2.23E+02	2.46E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.00E+00	2.81E+00	3.03E+00	3.01E+00	3.22E+00	3.17E+00
HWD	kg	9.03E-06	2.90E-05	4.10E-05	6.48E-05	9.02E-06	1.04E-05
NHWD	kg	5.00E-01	2.27E+00	2.85E+00	4.43E+00	9.79E-01	1.09E+00
RWD	kg	1.57E-03	4.16E-03	5.32E-03	8.10E-03	1.69E-03	1.94E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 15. Environmental profiles (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Indicator	Unit	POST TENSIONED 40MPA 22@3	POST TENSIONED 40MPA 22@4	POST TENSIONED 40MPA 22@5	TREMIE 40MPA	TREMIE 50MPA
GWP	**kg CO_2 eq**	**325**	**314**	**297**	**317**	**378**
ODP	kg CFC11 eq	3.82E-06	3.82E-06	3.77E-06	3.84E-06	4.10E-06
AP	kg SO_2 eq	0.512	0.502	0.481	0.510	0.586
EP	kg PO_4^{3-} eq	0.120	0.117	0.112	0.118	0.137
POCP	kg C_2H_4 eq	0.0430	0.0428	0.0417	0.0438	0.0486
ADPE	kg Sb eq	5.32E-06	5.63E-06	5.48E-06	1.10E-05	1.24E-05
ADPF	MJ_{NCV}	2000	1970	1880	2020	2360

Table 16. Environmental parameters (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Parameter	Unit	POST TENSIONED 40MPA 22@3	POST TENSIONED 40MPA 22@4	POST TENSIONED 40MPA 22@5	TREMIE 40MPA	TREMIE 50MPA
PERE	MJ_{NCV}	4.66E+01	4.60E+01	4.38E+01	5.09E+01	5.93E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	8.66E-02	8.66E-02
PERT	MJ_{NCV}	4.66E+01	4.60E+01	4.38E+01	5.10E+01	5.94E+01
PENRE	MJ_{NCV}	2.04E+03	2.01E+03	1.92E+03	2.06E+03	2.40E+03
PENRM	MJ_{NCV}	7.65E+00	8.22E+00	8.03E+00	1.44E+01	1.67E+01
PENRT	MJ_{NCV}	2.05E+03	2.02E+03	1.93E+03	2.08E+03	2.42E+03
SM	kg	8.35E+01	1.31E+02	1.50E+02	1.51E+02	1.86E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.03E+00	2.96E+00	2.94E+00	2.97E+00	2.86E+00
HWD	kg	1.06E-05	1.14E-05	1.11E-05	3.02E-05	3.34E-05
NHWD	kg	1.20E+00	1.27E+00	1.23E+00	2.19E+00	2.49E+00
RWD	kg	1.99E-03	2.14E-03	2.09E-03	4.01E-03	4.61E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 17. Environmental profiles (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Indicator	Unit	TfNSW B80 40MPA 20MM PUMP B1 EXPOSURE	TfNSW B80 40MPA 20MM PUMP B2 EXPOSURE	TfNSW B80 50MPA 10MM PUMP B2 EXPOSURE	TfNSW B80 50MPA 20MM PUMP B1 EXPOSURE	TfNSW B80 50MPA 20MM PUMP B2 EXPOSURE
GWP	**kg CO_2 eq**	**317**	**248**	**250**	**405**	**251**
ODP	kg CFC11 eq	3.89E-06	3.82E-06	3.83E-06	4.25E-06	3.91E-06
AP	kg SO_2 eq	0.506	0.436	0.443	0.615	0.448
EP	kg PO_4^{3-} eq	0.118	0.100	0.101	0.145	0.102
POCP	kg C_2H_4 eq	0.0433	0.0409	0.0417	0.0500	0.0424
ADPE	kg Sb eq	5.62E-06	6.11E-06	1.07E-05	7.55E-06	1.07E-05
ADPF	MJ_{NCV}	1970	1730	1780	2450	1800

Table 18. Environmental parameters (A1-A3), concrete for special applications, Sydney region (NSW), per m^3

Parameter	Unit	TfNSW B80 40MPA 20MM PUMP B1 EXPOSURE	TfNSW B80 40MPA 20MM PUMP B2 EXPOSURE	TfNSW B80 50MPA 10MM PUMP B2 EXPOSURE	TfNSW B80 50MPA 20MM PUMP B1 EXPOSURE	TfNSW B80 50MPA 20MM PUMP B2 EXPOSURE
PERE	MJ_{NCV}	4.57E+01	4.10E+01	4.52E+01	5.77E+01	4.55E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	6.73E-02	0.00E+00	6.73E-02
PERT	MJ_{NCV}	4.57E+01	4.10E+01	4.53E+01	5.77E+01	4.55E+01
PENRE	MJ_{NCV}	2.01E+03	1.77E+03	1.82E+03	2.50E+03	1.83E+03
PENRM	MJ_{NCV}	8.22E+00	9.18E+00	1.55E+01	1.22E+01	1.55E+01
PENRT	MJ_{NCV}	2.02E+03	1.78E+03	1.83E+03	2.51E+03	1.85E+03
SM	kg	1.25E+02	2.77E+02	2.77E+02	1.59E+02	2.77E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.04E+00	2.98E+00	2.99E+00	2.93E+00	3.09E+00
HWD	kg	1.14E-05	1.27E-05	2.89E-05	1.65E-05	2.89E-05
NHWD	kg	1.25E+00	1.41E+00	2.14E+00	1.60E+00	2.14E+00
RWD	kg	2.14E-03	2.39E-03	4.13E-03	3.07E-03	4.13E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 19. Environmental profiles (A1-A3), concrete for special applications, Sydney (NSW), per m^3

Indicator	Unit	NO FINES 6:1	STABILISED SAND 14:1	STABILISED SAND 4:1	STABILISED SAND 8:1
GWP	**kg CO_2 eq**	**182**	**83**	**210**	**121**
ODP	kg CFC11 eq	3.01E-06	2.32E-06	3.28E-06	2.60E-06
AP	kg SO_2 eq	0.330	0.192	0.365	0.244
EP	kg PO_4^{3-} eq	0.0765	0.0427	0.0835	0.0550
POCP	kg C_2H_4 eq	0.0308	0.0212	0.0344	0.0251
ADPE	kg Sb eq	7.84E-07	4.60E-07	7.87E-07	5.59E-07
ADPF	MJ_{NCV}	1270	670	1440	900

Table 20. Environmental parameters (A1-A3), concrete for special applications, Sydney (NSW), per m^3

Parameter	Unit	NO FINES 6:1	STABILISED SAND 14:1	STABILISED SAND 4:1	STABILISED SAND 8:1
PERE	MJ_{NCV}	2.90E+01	1.46E+01	3.19E+01	1.98E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.90E+01	1.46E+01	3.19E+01	1.98E+01
PENRE	MJ_{NCV}	1.30E+03	6.92E+02	1.47E+03	9.28E+02
PENRM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	MJ_{NCV}	1.30E+03	6.92E+02	1.47E+03	9.28E+02
SM	kg	1.09E+02	7.10E+01	2.23E+02	1.14E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.64E+00	2.34E+00	2.42E+00	2.37E+00
HWD	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NHWD	kg	3.85E-01	1.97E-01	4.17E-01	2.63E-01
RWD	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 21. Environmental profiles (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Indicator	Unit	SLAG AGG CONCRETE MIX, LC50 20MPA	SLAG AGG CONCRETE MIX, LC50 25MPA	SLAG AGG CONCRETE MIX, LC50 32MPA	SLAG AGG CONCRETE MIX, LC50 40MPA	SLAG AGG CONCRETE MIX, LC50 50MPA
GWP	**kg CO_2 eq**	**158**	**175**	**204**	**233**	**287**
ODP	kg CFC11 eq	3.75E-06	3.83E-06	3.94E-06	4.05E-06	4.26E-06
AP	kg SO_2 eq	0.340	0.362	0.398	0.433	0.501
EP	kg PO_4^{3-} eq	0.0707	0.0759	0.0845	0.0930	0.109
POCP	kg C_2H_4 eq	0.0424	0.0439	0.0461	0.0484	0.0527
ADPE	kg Sb eq	4.28E-06	4.59E-06	5.25E-06	5.85E-06	7.10E-06
ADPF	MJ_{NCV}	1260	1360	1540	1710	2030

Table 22. Environmental parameters (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Parameter	Unit	SLAG AGG CONCRETE MIX, LC50 20MPA	SLAG AGG CONCRETE MIX, LC50 25MPA	SLAG AGG CONCRETE MIX, LC50 32MPA	SLAG AGG CONCRETE MIX, LC50 40MPA	SLAG AGG CONCRETE MIX, LC50 50MPA
PERE	MJ_{NCV}	2.50E+01	2.76E+01	3.19E+01	3.61E+01	4.42E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.50E+01	2.76E+01	3.19E+01	3.61E+01	4.42E+01
PENRE	MJ_{NCV}	1.30E+03	1.40E+03	1.58E+03	1.75E+03	2.08E+03
PENRM	MJ_{NCV}	5.74E+00	6.22E+00	7.28E+00	8.22E+00	1.02E+01
PENRT	MJ_{NCV}	1.30E+03	1.41E+03	1.58E+03	1.76E+03	2.09E+03
SM	kg	1.94E+02	2.07E+02	2.27E+02	2.48E+02	2.88E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.43E+00	2.40E+00	2.33E+00	2.27E+00	2.14E+00
HWD	kg	7.96E-06	8.62E-06	1.01E-05	1.14E-05	1.42E-05
NHWD	kg	8.67E-01	9.45E-01	1.10E+00	1.24E+00	1.54E+00
RWD	kg	1.49E-03	1.62E-03	1.89E-03	2.14E-03	2.66E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 23. Environmental profiles (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Indicator	Unit	SLAG AGG CONCRETE MIX, LC40 20MPA	SLAG AGG CONCRETE MIX, LC40 25MPA	SLAG AGG CONCRETE MIX, LC40 32MPA	SLAG AGG CONCRETE MIX, LC40 40MPA	SLAG AGG CONCRETE MIX, LC40 50MPA
GWP	**kg CO_2 eq**	**182**	**196**	**223**	**262**	**323**
ODP	kg CFC11 eq	3.81E-06	3.87E-06	3.99E-06	4.15E-06	4.38E-06
AP	kg SO_2 eq	0.367	0.384	0.418	0.466	0.541
EP	kg PO_4^{3-} eq	0.0776	0.0817	0.0899	0.101	0.120
POCP	kg C_2H_4 eq	0.0437	0.0448	0.0470	0.0500	0.0546
ADPE	kg Sb eq	4.27E-06	4.62E-06	5.11E-06	5.78E-06	6.98E-06
ADPF	MJ_{NCV}	1360	1440	1600	1820	2160

Table 24. Environmental parameters (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Parameter	Unit	SLAG AGG CONCRETE MIX, LC40 20MPA	SLAG AGG CONCRETE MIX, LC40 25MPA	SLAG AGG CONCRETE MIX, LC40 32MPA	SLAG AGG CONCRETE MIX, LC40 40MPA	SLAG AGG CONCRETE MIX, LC40 50MPA
PERE	MJ_{NCV}	2.73E+01	2.93E+01	3.31E+01	3.84E+01	4.70E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.73E+01	2.93E+01	3.31E+01	3.84E+01	4.70E+01
PENRE	MJ_{NCV}	1.40E+03	1.48E+03	1.64E+03	1.86E+03	2.21E+03
PENRM	MJ_{NCV}	5.64E+00	6.22E+00	6.98E+00	8.03E+00	9.94E+00
PENRT	MJ_{NCV}	1.41E+03	1.49E+03	1.65E+03	1.87E+03	2.22E+03
SM	kg	1.58E+02	1.74E+02	1.84E+02	2.00E+02	2.34E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.46E+00	2.42E+00	2.38E+00	2.33E+00	2.20E+00
HWD	kg	7.83E-06	8.62E-06	9.69E-06	1.11E-05	1.38E-05
NHWD	kg	8.60E-01	9.36E-01	1.05E+00	1.21E+00	1.49E+00
RWD	kg	1.47E-03	1.62E-03	1.82E-03	2.09E-03	2.59E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Sydney Region

Table 25. Environmental profiles (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Indicator	Unit	SLAG AGG CONCRETE MIX, LC30 20MPA	SLAG AGG CONCRETE MIX, LC30 25MPA	SLAG AGG CONCRETE MIX, LC30 32MPA	SLAG AGG CONCRETE MIX, LC30 40MPA	SLAG AGG CONCRETE MIX, LC30 50MPA
GWP	**kg CO_2 eq**	**201**	**225**	**266**	**306**	**391**
ODP	kg CFC11 eq	3.81E-06	3.89E-06	4.04E-06	4.16E-06	4.49E-06
AP	kg SO_2 eq	0.386	0.415	0.464	0.511	0.614
EP	kg PO_4^{3-} eq	0.0827	0.0896	0.102	0.113	0.138
POCP	kg C_2H_4 eq	0.0443	0.0460	0.0489	0.0516	0.0580
ADPE	kg Sb eq	4.23E-06	4.70E-06	5.32E-06	5.93E-06	6.91E-06
ADPF	MJ_{NCV}	1440	1560	1780	2000	2450

Table 26. Environmental parameters (A1-A3), low carbon concrete with slag aggregates, Sydney region (NSW), per m^3

Parameter	Unit	SLAG AGG CONCRETE MIX, LC30 20MPA	SLAG AGG CONCRETE MIX, LC30 25MPA	SLAG AGG CONCRETE MIX, LC30 32MPA	SLAG AGG CONCRETE MIX, LC30 40MPA	SLAG AGG CONCRETE MIX, LC30 50MPA
PERE	MJ_{NCV}	2.89E+01	3.20E+01	3.74E+01	4.26E+01	5.32E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.89E+01	3.20E+01	3.74E+01	4.26E+01	5.32E+01
PENRE	MJ_{NCV}	1.47E+03	1.61E+03	1.83E+03	2.04E+03	2.51E+03
PENRM	MJ_{NCV}	5.55E+00	6.31E+00	7.27E+00	8.22E+00	8.51E+00
PENRT	MJ_{NCV}	1.48E+03	1.61E+03	1.83E+03	2.05E+03	2.51E+03
SM	kg	1.25E+02	1.39E+02	1.44E+02	1.50E+02	1.71E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.43E+00	2.37E+00	2.33E+00	2.25E+00	2.10E+00
HWD	kg	7.69E-06	8.75E-06	1.01E-05	1.14E-05	1.24E-05
NHWD	kg	8.40E-01	9.44E-01	1.09E+00	1.23E+00	1.54E+00
RWD	kg	1.44E-03	1.64E-03	1.89E-03	2.14E-03	2.36E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Product table list
Southern Highlands

Table No. 1 and 2

LC30 20MPa
LC30 25MPa
LC30 32MPa
LC30 40MPa
LC30 50MPa

Table No. 3 and 4

NORMAL CLASS GP BLEND 20MPa
NORMAL CLASS GP BLEND 25MPa
NORMAL CLASS GP BLEND 32MPa
NORMAL CLASS GP BLEND 40MPa
NORMAL CLASS GP BLEND 50MPa

Table No. 5 and 6

NO FINES 6:1
POST TENSIONED 40MPA 22@4
STABILISED SAND 14:1
STABILISED SAND 8:1

Table No. 7 and 8

BURNISHED MIX WITHOUT FIBRES
HIGH SLUMP 50MPA
KERB MACHINE 25MPA 10MM
KERB MACHINE 32MPA 10MM

Southern Highlands

Table 1. Environmental profiles (A1-A3), lower carbon concrete, Southern Highlands region (NSW), per m^3

Indicator	Unit	LC30 20MPA	LC30 25MPA	LC30 32MPA	LC30 40MPA	LC30 50MPA
GWP	**kg CO_2 eq**	**211**	**228**	**270**	**320**	**393**
ODP	kg CFC11 eq	3.73E-06	3.75E-06	3.75E-06	3.75E-06	3.88E-06
AP	kg SO_2 eq	0.368	0.387	0.434	0.489	0.574
EP	kg PO_4^{3-} eq	0.0839	0.0887	0.100	0.114	0.135
POCP	kg C_2H_4 eq	0.0381	0.0389	0.0407	0.0428	0.0469
ADPE	kg Sb eq	4.13E-06	4.39E-06	5.15E-06	5.81E-06	7.08E-06
ADPF	MJ_{NCV}	1390	1480	1700	1950	2330

Table 2. Environmental parameters (A1-A3), lower carbon concrete, Southern Highlands region (NSW), per m^3

Parameter	Unit	LC30 20MPA	LC30 25MPA	LC30 32MPA	LC30 40MPA	LC30 50MPA
PERE	MJ_{NCV}	2.99E+01	3.21E+01	3.78E+01	4.44E+01	5.41E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	2.99E+01	3.21E+01	3.78E+01	4.44E+01	5.41E+01
PENRE	MJ_{NCV}	1.43E+03	1.52E+03	1.74E+03	2.00E+03	2.38E+03
PENRM	MJ_{NCV}	6.34E+00	6.78E+00	8.09E+00	9.18E+00	1.14E+01
PENRT	MJ_{NCV}	1.44E+03	1.53E+03	1.75E+03	2.01E+03	2.39E+03
SM	kg	1.00E+02	1.01E+02	1.02E+02	1.04E+02	1.33E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.27E+00	3.25E+00	3.18E+00	3.10E+00	2.99E+00
HWD	kg	8.54E-06	9.13E-06	1.09E-05	1.24E-05	1.53E-05
NHWD	kg	8.46E-01	9.03E-01	1.06E+00	1.22E+00	1.49E+00
RWD	kg	1.59E-03	1.70E-03	2.03E-03	2.31E-03	2.85E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Southern Highlands

Table 3. Environmental profiles (A1-A3), normal class concrete, Southern Highlands region (NSW), per m^3

Indicator	Unit	NORMAL CLASS GP BLEND 20MPA	NORMAL CLASS GP BLEND 25MPA	NORMAL CLASS GP BLEND 32MPA	NORMAL CLASS GP BLEND 40MPA	NORMAL CLASS GP BLEND 50MPA
GWP	**kg CO_2 eq**	**251**	**272**	**302**	**369**	**446**
ODP	kg CFC11 eq	3.50E-06	3.52E-06	3.52E-06	3.56E-06	3.59E-06
AP	kg SO_2 eq	0.405	0.429	0.462	0.538	0.623
EP	kg PO_4^{3-} eq	0.0939	0.100	0.108	0.127	0.148
POCP	kg C_2H_4 eq	0.0377	0.0387	0.0399	0.0430	0.0464
ADPE	kg Sb eq	3.78E-06	4.11E-06	4.56E-06	5.60E-06	6.77E-06
ADPF	MJ_{NCV}	1570	1680	1830	2180	2570

Table 4. Environmental parameters (A1-A3), normal class concrete, Southern Highlands region (NSW), per m^3

Parameter	Unit	NORMAL CLASS GP BLEND 20MPA	NORMAL CLASS GP BLEND 25MPA	NORMAL CLASS GP BLEND 32MPA	NORMAL CLASS GP BLEND 40MPA	NORMAL CLASS GP BLEND 50MPA
PERE	MJ_{NCV}	3.50E+01	3.78E+01	4.17E+01	5.07E+01	6.08E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.50E+01	3.78E+01	4.17E+01	5.07E+01	6.08E+01
PENRE	MJ_{NCV}	1.61E+03	1.73E+03	1.88E+03	2.23E+03	2.62E+03
PENRM	MJ_{NCV}	5.46E+00	6.01E+00	6.78E+00	8.52E+00	1.05E+01
PENRT	MJ_{NCV}	1.62E+03	1.73E+03	1.88E+03	2.24E+03	2.63E+03
SM	kg	8.08E+00	8.88E+00	1.00E+01	1.26E+01	1.55E+01
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.39E+00	3.37E+00	3.32E+00	3.24E+00	3.15E+00
HWD	kg	7.36E-06	8.10E-06	9.13E-06	1.15E-05	1.41E-05
NHWD	kg	8.20E-01	8.92E-01	9.91E-01	1.22E+00	1.48E+00
RWD	kg	1.37E-03	1.51E-03	1.70E-03	2.14E-03	2.64E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Southern Highlands

Table 5. Environmental profiles (A1-A3), concrete for special applications, Southern Highlands region (NSW), per m^3

Indicator	Unit	NO FINES 6:1	POST TENSIONED 40MPA 22@4	STABILISED SAND 14:1	STABILISED SAND 8:1
GWP	**kg CO_2 eq**	**232**	**371**	**109**	**166**
ODP	kg CFC11 eq	2.64E-06	3.74E-06	2.78E-06	3.01E-06
AP	kg SO_2 eq	0.349	0.545	0.221	0.290
EP	kg PO_4^{3-} eq	0.0820	0.129	0.0494	0.0662
POCP	kg C_2H_4 eq	0.0298	0.0446	0.0260	0.0301
ADPE	kg Sb eq	8.05E-07	6.05E-06	5.16E-07	6.40E-07
ADPF	MJ_{NCV}	1390	2210	770	1070

Table 6. Environmental parameters (A1-A3), concrete for special applications, Southern Highlands region (NSW), per m^3

Parameter	Unit	NO FINES 6:1	POST TENSIONED 40MPA 22@4	STABILISED SAND 14:1	STABILISED SAND 8:1
PERE	MJ_{NCV}	3.08E+01	5.10E+01	1.43E+01	2.13E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.08E+01	5.10E+01	1.43E+01	2.13E+01
PENRE	MJ_{NCV}	1.42E+03	2.25E+03	7.99E+02	1.10E+03
PENRM	MJ_{NCV}	0.00E+00	9.40E+00	0.00E+00	0.00E+00
PENRT	MJ_{NCV}	1.42E+03	2.26E+03	7.99E+02	1.10E+03
SM	kg	7.75E+00	5.42E+01	3.43E+01	6.76E+01
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.58E+00	3.23E+00	2.45E+00	2.47E+00
HWD	kg	0.00E+00	1.27E-05	0.00E+00	0.00E+00
NHWD	kg	3.17E-01	1.30E+00	1.56E-01	2.22E-01
RWD	kg	0.00E+00	2.36E-03	0.00E+00	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Southern Highlands

Table 7. Environmental profiles (A1-A3), concrete for special applications, Southern Highlands region (NSW), per m^3

Indicator	Unit	BURNISHED MIX WITHOUT FIBRES	HIGH SLUMP 50MPA	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
GWP	**kg CO_2 eq**	**295**	**398**	**255**	**281**
ODP	kg CFC11 eq	3.74E-06	4.09E-06	4.15E-06	4.14E-06
AP	kg SO_2 eq	0.461	0.588	0.433	0.461
EP	kg PO_4^{3-} eq	0.107	0.138	0.0992	0.106
POCP	kg C_2H_4 eq	0.0416	0.0487	0.0433	0.0443
ADPE	kg Sb eq	5.31E-06	7.19E-06	4.98E-06	5.36E-06
ADPF	MJ_{NCV}	1820	2360	1640	1770

Table 8. Environmental parameters (A1-A3), concrete for special applications, Southern Highlands region (NSW), per m^3

Parameter	Unit	BURNISHED MIX WITHOUT FIBRES	HIGH SLUMP 50MPA	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
PERE	MJ_{NCV}	4.10E+01	5.39E+01	3.52E+01	3.85E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	4.10E+01	5.39E+01	3.52E+01	3.85E+01
PENRE	MJ_{NCV}	1.86E+03	2.41E+03	1.69E+03	1.82E+03
PENRM	MJ_{NCV}	8.31E+00	1.16E+01	7.65E+00	8.31E+00
PENRT	MJ_{NCV}	1.87E+03	2.42E+03	1.70E+03	1.83E+03
SM	kg	9.29E+01	1.28E+02	1.12E+02	1.13E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.17E+00	3.02E+00	3.32E+00	3.27E+00
HWD	kg	1.12E-05	1.56E-05	1.08E-05	1.17E-05
NHWD	kg	1.11E+00	1.50E+00	1.00E+00	1.09E+00
RWD	kg	2.09E-03	2.91E-03	2.00E-03	2.16E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Product table list Canberra region

Table No. 1 and 2

LC30 20MPa
LC30 25MPa
LC30 32MPa
LC30 40MPa
LC30 50MPa

Table No. 3 and 4

NORMAL CLASS GP BLEND 20MPa
NORMAL CLASS GP BLEND 25MPa
NORMAL CLASS GP BLEND 32MPa
NORMAL CLASS GP BLEND 40MPa

Table No. 5 and 6

NO FINES 6:1
POST TENSIONED 40MPA 22@5
SHOTCRETE 40MPA 10MM
STABILISED SAND 4:1
STABILISED SAND 8:1

Table No. 7 and 8

TfNSW B80 40MPA 20MM PUMP B1 EXPOSURE
TfNSW B80 40MPA 20MM TREMIE B2 EXPOSURE
KERB MACHINE 25MPA 10MM
KERB MACHINE 32MPA 10MM

Canberra Region

Table 1. Environmental profiles (A1-A3), lower carbon concrete, Canberra region (ACT), per m^3

Indicator	Unit	LC30 20MPA	LC30 25MPA	LC30 32MPA	LC30 40MPA	LC30 50MPA
GWP	**kg CO_2 eq**	**222**	**246**	**268**	**330**	**408**
ODP	kg CFC11 eq	4.25E-06	4.53E-06	4.64E-06	4.99E-06	5.37E-06
AP	kg SO_2 eq	0.402	0.436	0.463	0.542	0.640
EP	kg PO_4^{3-} eq	0.0912	0.0991	0.106	0.125	0.149
POCP	kg C_2H_4 eq	0.0425	0.0457	0.0475	0.0529	0.0593
ADPE	kg Sb eq	4.45E-06	4.81E-06	4.98E-06	5.93E-06	7.32E-06
ADPF	MJ_{NCV}	1480	1620	1730	2080	2500

Table 2. Environmental parameters (A1-A3), lower carbon concrete, Canberra region (ACT), per m^3

Parameter	Unit	LC30 20MPA	LC30 25MPA	LC30 32MPA	LC30 40MPA	LC30 50MPA
PERE	MJ_{NCV}	3.05E+01	3.34E+01	3.60E+01	4.41E+01	5.43E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.05E+01	3.34E+01	3.60E+01	4.41E+01	5.43E+01
PENRE	MJ_{NCV}	1.53E+03	1.67E+03	1.78E+03	2.13E+03	2.57E+03
PENRM	MJ_{NCV}	6.01E+00	6.56E+00	6.56E+00	8.52E+00	1.09E+01
PENRT	MJ_{NCV}	1.53E+03	1.67E+03	1.79E+03	2.14E+03	2.58E+03
SM	kg	7.96E+01	1.06E+02	1.12E+02	1.25E+02	1.44E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.20E+00	3.19E+00	3.16E+00	3.13E+00	3.02E+00
HWD	kg	8.13E-06	8.90E-06	9.02E-06	1.15E-05	1.47E-05
NHWD	kg	8.10E-01	8.91E-01	9.51E-01	1.14E+00	1.44E+00
RWD	kg	1.52E-03	1.66E-03	1.69E-03	2.14E-03	2.74E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Canberra Region

Table 3. Environmental profiles (A1-A3), normal class concrete, Canberra region (ACT), per m^3

Indicator	Unit	NORMAL CLASS GP BLEND 20MPA	NORMAL CLASS GP BLEND 25MPA	NORMAL CLASS GP BLEND 32MPA	NORMAL CLASS GP BLEND 40MPA
GWP	**kg CO_2 eq**	**271**	**280**	**323**	**367**
ODP	kg CFC11 eq	4.01E-06	4.11E-06	4.25E-06	4.41E-06
AP	kg SO_2 eq	0.446	0.460	0.512	0.566
EP	kg PO_4^{3-} eq	0.103	0.106	0.119	0.132
POCP	kg C_2H_4 eq	0.0423	0.0434	0.0464	0.0496
ADPE	kg Sb eq	4.04E-06	4.27E-06	4.91E-06	5.95E-06
ADPF	MJ_{NCV}	1700	1760	1990	2220

Table 4. Environmental parameters (A1-A3), normal class concrete, Canberra region (ACT), per m^3

Parameter	Unit	NORMAL CLASS GP BLEND 20MPA	NORMAL CLASS GP BLEND 25MPA	NORMAL CLASS GP BLEND 32MPA	NORMAL CLASS GP BLEND 40MPA
PERE	MJ_{NCV}	3.67E+01	3.77E+01	4.34E+01	4.93E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.67E+01	3.77E+01	4.34E+01	4.93E+01
PENRE	MJ_{NCV}	1.75E+03	1.80E+03	2.04E+03	2.28E+03
PENRM	MJ_{NCV}	6.01E+00	5.46E+00	6.56E+00	8.20E+00
PENRT	MJ_{NCV}	1.76E+03	1.81E+03	2.04E+03	2.28E+03
SM	kg	8.72E+00	9.04E+00	1.07E+01	1.23E+01
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.23E+00	3.27E+00	3.20E+00	3.15E+00
HWD	kg	7.65E-06	7.36E-06	8.84E-06	1.11E-05
NHWD	kg	7.23E-01	8.20E-01	9.64E-01	1.18E+00
RWD	kg	1.40E-03	1.37E-03	1.65E-03	2.08E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Canberra Region

Table 5. Environmental profiles (A1-A3), concrete for special applications, Canberra region (ACT), per m^3

Indicator	Unit	NO FINES 6:1	POST TENSIONED 40MPA 22@5	SHOTCRETE 40MPA 10MM	STABILISED SAND 4:1	STABILISED SAND 8:1
GWP	**kg CO_2 eq**	**243**	**313**	**363**	**271**	**186**
ODP	kg CFC11 eq	3.04E-06	4.89E-06	5.01E-06	4.64E-06	3.39E-06
AP	kg SO_2 eq	0.379	0.521	0.579	0.459	0.327
EP	kg PO_4^{3-} eq	0.0890	0.120	0.134	0.105	0.0745
POCP	kg C_2H_4 eq	0.0331	0.0515	0.0547	0.0474	0.0338
ADPE	kg Sb eq	1.87E-06	6.14E-06	6.67E-06	9.63E-07	7.88E-07
ADPF	MJ_{NCV}	1470	1990	2250	1720	1210

Table 6. Environmental parameters (A1-A3), concrete for special applications, Canberra region (ACT), per m^3

Parameter	Unit	NO FINES 6:1	POST TENSIONED 40MPA 22@5	SHOTCRETE 40MPA 10MM	STABILISED SAND 4:1	STABILISED SAND 8:1
PERE	MJ_{NCV}	3.16E+01	4.22E+01	4.88E+01	3.39E+01	2.42E+01
PERM	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	MJ_{NCV}	3.16E+01	4.22E+01	4.88E+01	3.39E+01	2.42E+01
PENRE	MJ_{NCV}	1.51E+03	2.04E+03	2.31E+03	1.77E+03	1.24E+03
PENRM	MJ_{NCV}	2.19E+00	9.29E+00	9.84E+00	0.00E+00	0.00E+00
PENRT	MJ_{NCV}	1.51E+03	2.05E+03	2.32E+03	1.77E+03	1.24E+03
SM	kg	8.08E+00	1.24E+02	1.16E+02	1.18E+02	5.81E+00
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	2.48E+00	3.13E+00	2.89E+00	2.59E+00	2.52E+00
HWD	kg	2.34E-06	1.24E-05	1.36E-05	0.00E+00	0.00E+00
NHWD	kg	3.19E-01	1.14E+00	1.32E+00	3.11E-01	2.23E-01
RWD	kg	4.08E-04	2.30E-03	2.54E-03	0.00E+00	0.00E+00
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Canberra Region

Table 7. Environmental profiles (A1-A3), concrete for special applications, Canberra region (ACT), per m^3

Indicator	Unit	TFNSW B80 40MPA 20MM PUMP B1 EXPOSURE	TFNSW B80 40MPA 20MM TREMIE B2 EXPOSURE	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
GWP	**kg CO_2 eq**	**322**	**366**	**245**	**271**
ODP	kg CFC11 eq	4.85E-06	5.11E-06	4.84E-06	5.00E-06
AP	kg SO_2 eq	0.530	0.599	0.445	0.479
EP	kg PO_4^{3-} eq	0.122	0.137	0.101	0.109
POCP	kg C_2H_4 eq	0.0518	0.0567	0.0483	0.0508
ADPE	kg Sb eq	7.16E-06	1.71E-05	5.62E-06	5.91E-06
ADPF	MJ_{NCV}	2050	2330	1640	1790

Table 8. Environmental parameters (A1-A3), concrete for special applications, Canberra region (ACT), per m^3

Parameter	Unit	TFNSW B80 40MPA 20MM PUMP B1 EXPOSURE	TFNSW B80 40MPA 20MM TREMIE B2 EXPOSURE	KERB MACHINE 25MPA 10MM	KERB MACHINE 32MPA 10MM
PERE	MJ_{NCV}	4.45E+01	5.63E+01	3.35E+01	3.69E+01
PERM	MJ_{NCV}	0.00E+00	1.21E-01	0.00E+00	0.00E+00
PERT	MJ_{NCV}	4.45E+01	5.64E+01	3.35E+01	3.69E+01
PENRE	MJ_{NCV}	2.10E+03	2.39E+03	1.69E+03	1.84E+03
PENRM	MJ_{NCV}	1.37E+01	1.77E+01	7.65E+00	8.74E+00
PENRT	MJ_{NCV}	2.11E+03	2.40E+03	1.70E+03	1.85E+03
SM	kg	1.25E+02	1.16E+02	1.43E+02	1.54E+02
RSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF	MJ_{NCV}	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	m^3	3.06E+00	3.20E+00	3.17E+00	3.13E+00
HWD	kg	1.71E-05	4.14E-05	1.06E-05	1.18E-05
NHWD	kg	1.17E+00	3.41E+00	1.06E+00	1.09E+00
RWD	kg	3.11E-03	5.59E-03	1.99E-03	2.20E-03
CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	kg	9.60E+01	9.60E+01	9.60E+01	9.60E+01
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Other environmental information

Our approach

Concrite, as part of the Boral Group of Companies, recognise that climate related physical risks and a global transition to a lower-carbon future are expected to impact our operations, customers and suppliers.

We support the Paris Agreement and mechanisms to achieve its objective of limiting future average global temperature rises to well below 2°C, as well as Australia's 2030 target of a 26–28% reduction in carbon emissions below 2005 levels.

Energy and climate policy

Concrite, as part of the Boral Group of Companies, has not identified any major positions on energy and climate policy held by our industry associations that are materially inconsistent with Concrite's position.

We support:

- A national approach to climate and energy policy to ensure that least-cost carbon emissions abatement is targeted while ensuring reliable and competitive energy can be delivered.
- Climate and energy policies that do not unduly erode the competitiveness of domestic-based businesses.

Through our community partnership with Conservation Volunteers Australia, we support conservation and education initiatives in our local communities, including native vegetation initiatives in local reserves and schools.

In Australia, we are a member of the Cement Industry Federation (CIF). The CIF policy is to support the Federal Government's national target to reduce emissions by 26–28 per cent by 2030, and the CIF has been working with the World Business Council for Sustainable Development and its current roadmap to reduce emissions.

Concrite acknowledges the Paris Agreement and supports mechanisms to achieve its objectives, including a national approach to climate and energy policy. Concrite's major industry associations are:

- Green Building Council of Australia (GBCA)
- Infrastructure Sustainability Council (ISC)
- Concrete Institute of Australia (CIA)
- Australian Pozzolan Association (APozA)
- Business Council of Australia
- Cement Industry Federation
- Cement, Concrete & Aggregates Australia
- Australian Mines and Metals Association's Australian Resources and Energy Group
- American Coal Ash Association.

For more information visit Concrite.com/industry associations

Other environmental information

Waste and recycling

Throughout Concrite's operations, some materials commonly re-used back into our production processes, including concrete washout. This beneficially uses materials that would otherwise require disposal.

Biodiversity management

Concrite is part of the Boral Group of companies and protecting the diversity of plant and animal species at and around our operational sites is a core component of our land management efforts. Some examples of the many initiatives to protect biodiversity at our own sites include:

- Collaborating with the Royal Botanic Garden Sydney NSW in research on the endangered Illawarra Socketwood population at our Dunmore Quarry in New South Wales
- Partnering with Sleepy Burrows Wombat Sanctuary to capture and relocate wombats found at our Peppertree Quarry in New South Wales
- Maintaining koala fodder plantations at Narangba and Petrie quarries in Queensland.
- Conservation work to provide habitat for the threatened legless lizard and spiny rice-flower at Deer Park Quarry in Victoria
- Construction of a bird island habitat as part of our rehabilitation of wetlands at our Dunmore Quarry in New South Wales.

Through our community partnership with Conservation Volunteers Australia, we support conservation and education initiatives in our local communities, including native vegetation initiatives in local reserves and schools.

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