

Australian adoption of the Global Cement and Concrete Association Global Ratings for Low Carbon and Near Zero Concrete



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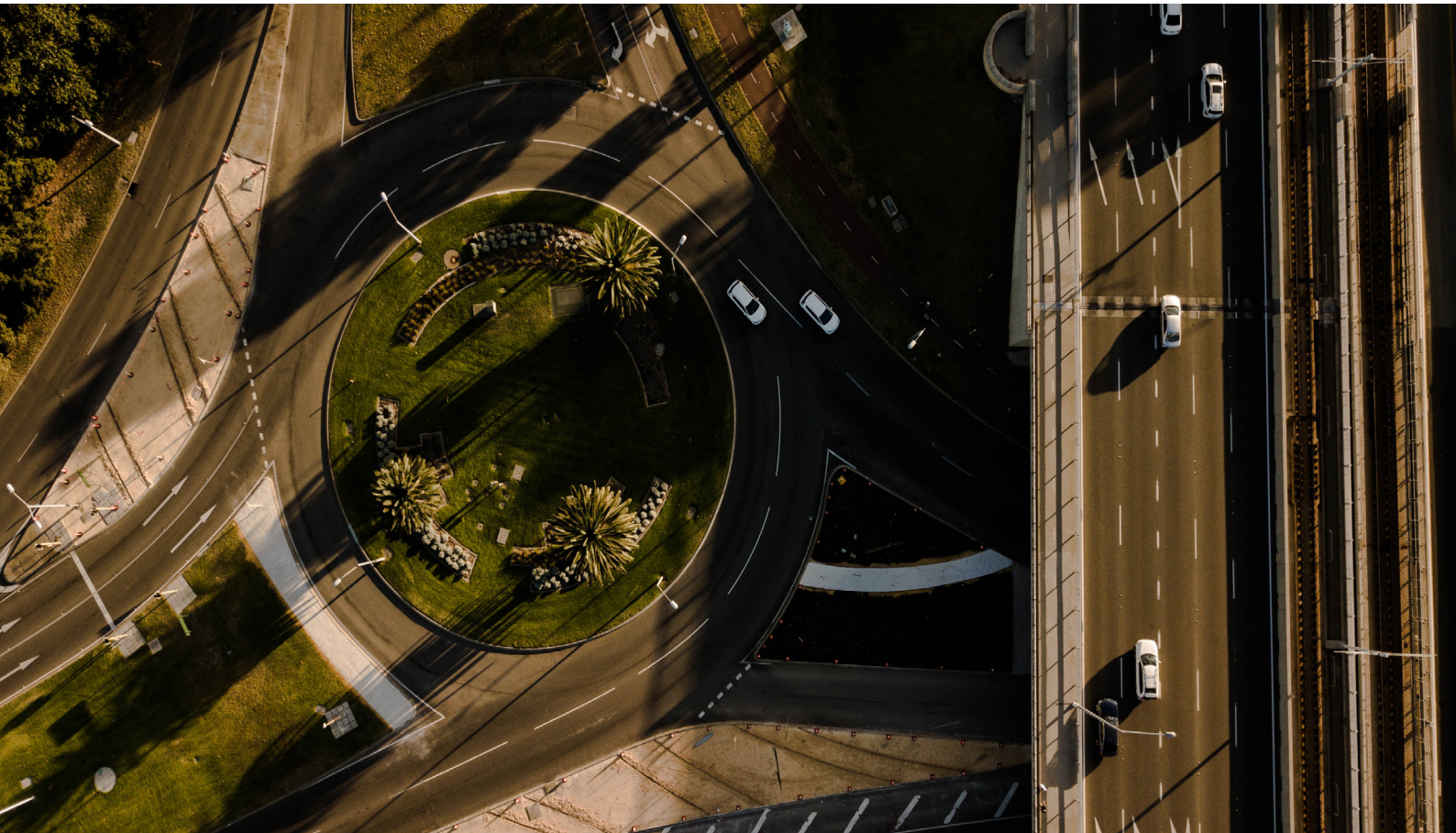
**Australian adoption of
the Global Cement and
Concrete Association
Global Ratings for
Low Carbon and Near
Zero Concrete**

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About CCAA

Cement Concrete & Aggregates Australia is the voice of the heavy construction materials industry in Australia. CCAA members produce the majority of Australia's cement, concrete, and aggregates, which are crucial to Australia's building and construction sectors. These materials support the development of our nation's transport, energy, water, housing, defence, and social infrastructure. The industry generates approximately \$15 Billion in annual revenues and employs approximately 30,000 Australians directly and a further 80,000 indirectly.



About GCCA

The Global Cement and Concrete Association (GCCA) is the global voice for the cement and concrete industry, established in 2018 to lead efforts in decarbonisation and sustainability. Its mission is to ensure concrete, a vital material, is compatible with climate and circular economy goals by documenting and improving the sector's performance through innovation and collaboration. The association represents over 80% of the world's cement production capacity outside of China and has a goal of achieving net-zero concrete by 2050.

1.0 Executive Summary

In April 2025 the Global Cement and Concrete Association (GCCA) released the Global Low Carbon Concrete Ratings System for concrete with strength grades ranging from 20 to 50 MPa.

Cement Concrete & Aggregates Australia (CCAA) has adopted the GCCA Global Rating System and extended the classification to include strength values below 20 MPa and above 50 MPa.

This guide provides the Australian Adoption of the GCCA numerical ratings in units of embodied carbon dioxide equivalent per cubic metre of product ($\text{kg CO}_2\text{e /m}^3$) also referred to as Global Warming Potential (GWP), for “low carbon” and “near zero” carbon emissions concrete product for the purposes of procurement.

This local adoption of the GCCA methodology has been developed by Cement Concrete & Aggregates Australia (CCAA). CCAA is the voice of the heavy construction materials industry in Australia and an association partner of the GCCA.

This low carbon rating system for concrete, as adopted from the GCCA Global Rating System, provides a clear and globally consistent way to classify concrete based on carbon emissions. The system is designed to support reporting, procurement and comparison of products relevant to the concrete application of interest. This ensures transparency in lower-carbon procurement and supports global and local efforts toward net-zero emissions by 2050.

2.0 Background

Australia’s cement and concrete sectors have declared an ambition to deliver net zero carbon cement and concrete by 2050, recognising both the challenges of climate change and the essential role of these materials in a sustainable, resilient built environment. This commitment is grounded in the [Decarbonisation Pathways for the Australian Cement and Concrete Sector report \(2021\)](#) which identifies the technologies, innovations, and policy changes required—from zero-emission electricity and transport, to greater use of supplementary cementitious materials, new CO_2 -efficient cements, recarbonation, and carbon capture, utilisation, and storage (CCUS).

The industry’s net zero ambition is further operationalised through the [Cement & Concrete Industry Decarbonisation Facilitation Plan](#), a practical framework that sets clear objectives, focus areas, and advocacy priorities to enable these pathways—including the standards reform and procurement policy alignment required to increase market pull and acceptance of lower-carbon solutions—ensuring that public and private demand for low-carbon cement and concrete translates into tangible emissions reductions across Australian projects.

In 2021, The Global Cement and Concrete Association (GCCA) published its 2050 Cement and Concrete Industry Roadmap for Net Zero Concrete, the collective commitment of the world’s leading cement and concrete companies. These companies called for stimulation of demand for low-carbon cement and concrete products through public procurement policy. Part of any such procurement policy is ratings for low carbon and near-zero cement and concrete.

GCCA has chosen to work with the Clean Energy Ministerial Industrial Deep Decarbonisation Initiative (IDDI) to create a set of globally applicable ratings for concrete.

The IDDI is a global coalition of public and private organisations. One of the key ambitions of IDDI is consistent ratings for low carbon and near-zero cement, concrete and steel. The IDDI employs the International Energy Agency (IEA) ratings for low carbon and near zero cement and crude steel as a robust starting point, and is contributing to processes to develop, refine and extend them as needed.

The key principles that IDDI required for Concrete ratings were:

- same concept of banding as used for cement and steel: i.e bands E to A with progressively lower carbon footprints down to a near zero emissions band
- a system that can be used in all countries for procurement
- a system that enables all countries to report progress and enables comparison between countries through use of common banding levels.

3.0 GCCA Global Ratings for Low Carbon and Near Zero Emissions Concrete

In April 2025 Global Cement and Concrete Association (GCCA) launched the Low Carbon Ratings system for Concrete.

The global system aims to incentivise procurement of more sustainable building materials and the approach will provide transparency and trust, and help governments and businesses identify and buy more sustainable concrete.

The GCCA low carbon concrete ratings system has the criteria of GWP (kg CO₂e/m³) and concrete strength (MPa). This is because higher-strength concrete generally requires more cement and hence has a higher carbon footprint. Users select the concrete strength for their specified or manufactured product, and can read the relevant ratings from graphical and tabulated presentation.

There are 8 ratings (AA to G):

- AA - Near Zero Emissions Concrete – builds on the International Energy Agency’s near-zero definition for cement and the GCCA global roadmap to 2050 for efficiency of cement in concrete and fully decarbonised electrical grid and transport system
- A – F - Equally spaced carbon footprint values define the ratings
- G – has no upper limit covering all concrete products not included in bands A-F. This extra band ensures that all concrete products and producers are included in the procurement process.

Environmental Product Declarations (EPDs) are the preferred method for measuring a product’s carbon footprint in low-carbon procurement because they offer established standards that simplify comparisons across construction materials. With a global infrastructure for creating and verifying EPDs, they provide a consistent and reliable approach. Each EPD includes a GWP indicator, making carbon footprint assessment straightforward. Additionally, construction professionals are more familiar with EPDs than other methods, and the transparency provided by EPD standards and Product Category Rules (PCRs) ensures clear ratings of environmental impacts throughout a product’s life cycle.

To compare against the global thresholds the GWP of the concrete product first needs to be calculated according to the EPD methodology.

Figure 1 – GCCA Global Ratings for Low Carbon and Near Zero Emissions Concrete

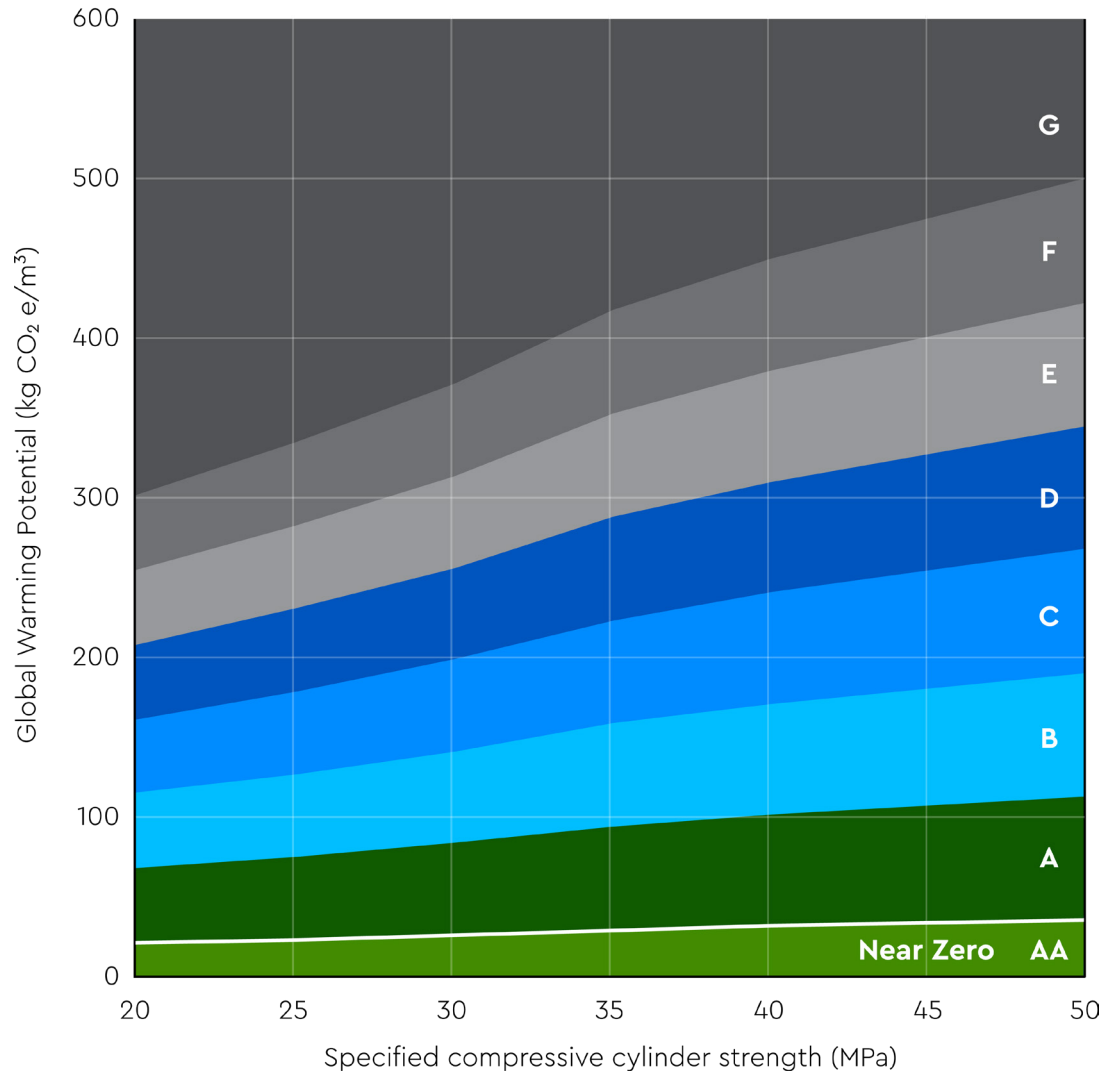


Table 1 – GCCA Global Ratings for Low Carbon and Near Zero Emissions Concrete values (kgCo2e/m³)

	Specified Concrete Cylinder Strength (MPa)					
	20	25	30	35	40	50
Top of band F	302	335	372	418	450	500
Top of band E	255	283	314	353	380	422
Top of band D	208	231	256	288	310	345
Top of band C	161	179	199	224	241	268
Top of band B	115	127	141	159	171	190
Top of band A	68	75	83	94	101	113
Top of band AA	21	23	26	29	32	36

Read more on the [GGCA website](#).

4.0 Australian Adoption

The CCAA Australian Adoption is aligned with GCCA and covers an extended strength range. This adoption ensures compatibility with Australian EPD practices while maintaining global consistency and comparability across GWP bands from AA-G. The 20-50 MPa bands presented in the Australian Adoption are directly adopted from the GCCA Global Ratings for Low Carbon Concrete. The Australian Adoption has been extended to include concrete grades from 5MPa through to 100MPa.

To determine banding for these extended strength grades (<20MPa and >50MPa) in the Australian Adoption, CCAA collaborated with GCCA to obtain base data and understand other country adoptions that were considered instructive. CCAA also engaged with MECLA to consider their analysis in conjunction with current Australian EPD data to determine the final positioning of the extended strength grades. The resulting Australian Adoption provides the globally consistent core 20-50MPa together with extended strength grades that are specific to the local market, whilst respecting the general gradient of the GCCA global curves across the 8 bands adopted. The adopted ratings for Australia are presented in Figure 2 and Table 2.

Figure 2 – Australian Adoption of Global Ratings for Low Carbon and Near Zero Emissions Concrete®

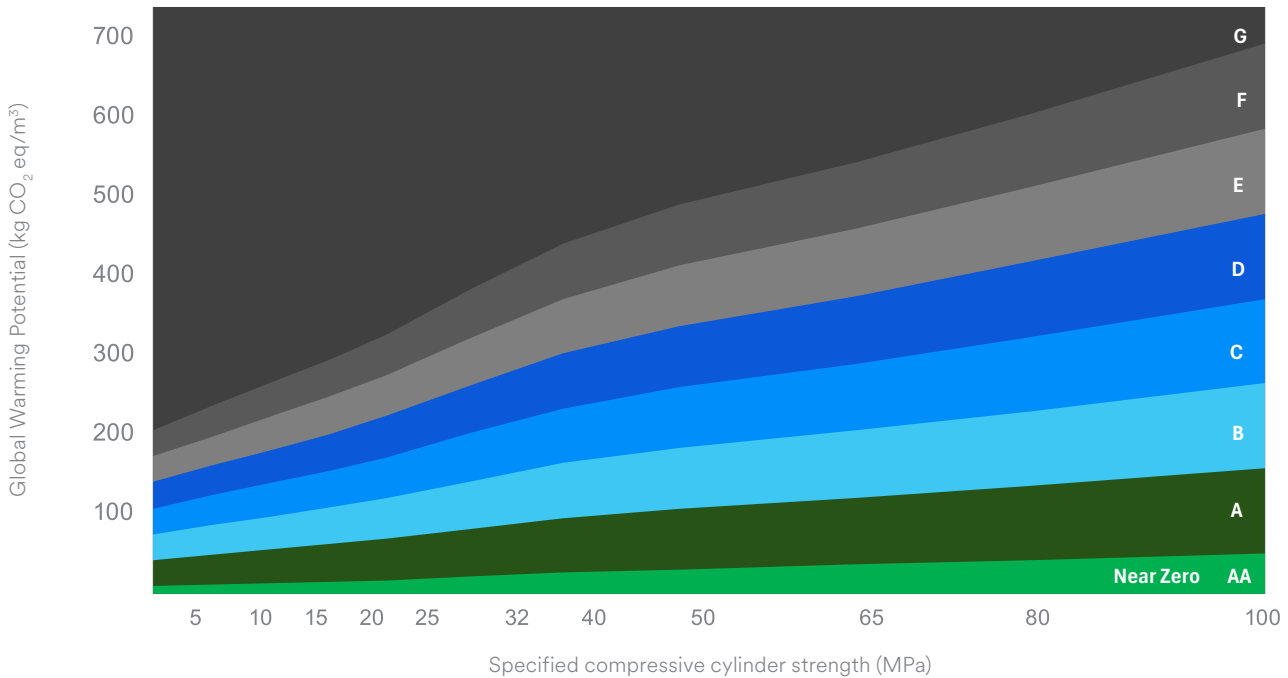


Figure 2 source: Cement Concrete & Aggregates Australia (2025)

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Table 2 – Australian Adoption of Global Ratings for Low Carbon and Near Zero Emissions Concrete values (kg CO2e/m3)®

	Specified Concrete Cylinder Strength (MPa)										
	5	10	15	20	25	32	40	50	65	80	100
Top of band F	213	243	272	302	335	390	450	500	552	615	703
Top of band E	180	205	230	255	283	330	380	422	468	521	596
Top of band D	147	167	188	208	231	269	310	345	383	426	488
Top of band C	114	130	146	161	179	209	241	268	298	332	380
Top of band B	81	92	103	115	127	148	171	190	212	237	272
Top of band A	48	55	61	68	75	87	101	113	127	143	164
Top of band AA	15	17	19	21	23	27	32	36	42	48	56

Table 2 source: Cement Concrete & Aggregates Australia (2025)

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5.0 Use with EPDs

This Australian Adoption is designed to be used with third party verified EPD data. Emission Scope assessed should be cradle-to-gate (A1-A3).

EPDs applied should follow the rules of the ECO Platform, as set out in the current version of the Verification Guidelines document: Verification Guidelines for ECO Platform EPD Programme Operators.

6.0 Benefits

The GCCA global ratings, and this Australian Adoption, provide a clear, globally consistent way to classify concrete based on carbon emissions:

- **Ready for Adoption:** A rating scheme that can be readily adopted by the Australian Value Chain, saving time and effort.
- **Standardised Measurement:** Uses Environmental Product Declarations (EPD), as a common reporting mechanism for evaluating the carbon footprint of concrete.
- **Supports Multilateral Government Initiatives:** Designed to align with Clean Energy Ministerial Industrial Deep Decarbonisation Initiative (IDDI) and builds on a starting point of IEA definitions.
- **Adopted for Australia:** While the GCCA ratings are global, they accommodate local adoption as indicated.
- **Global Comparability:** Enables carbon footprint comparison of concrete products through globally consistent ratings.

7.0 MECLA Guide to Low Carbon Concrete in Australia

The [Materials and Embodied Carbon Leaders' Alliance \(MECLA\)](#) has developed a Guide to Low Carbon Concrete in Australia that is published in Australia as a framework for rating concrete in terms of embodied carbon emissions.

The MECLA scheme is consistent in the goal to promote transparency, comparability, and consistency across the supply chain, supporting more informed decision-making in design, specification, and tender processes. This framework is important to recognise as a precursor to the new Australian adoption.

MECLA has adopted our Low Carbon Concrete definitions and developed a supporting framework that aids in interpreting and using the Australian Adoption of the GCCA Concrete Rating System.

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