CLIMATE GROUP
CONCRETE ZERO

In partnership with
WORLD GREEN BUILDING COUNCIL

ConcreteZero commitment framework and campaign overview

Version 1.1, December 2024

1. Introduction

ConcreteZero is an initiative run by **Climate Group** in partnership with WorldGBC that brings together pioneering organisations to create a global market for net zero concrete.

Our aim is to drive the decarbonisation of the concrete sector by bringing together a united group of leading businesses committed to using, procuring, or specifying net zero concrete. By harnessing their collective action, ConcreteZero sends a strong demand signal to shift global markets, investment and policies towards responsible production and sourcing of concrete, creating a market for net zero concrete.

Making a public net zero concrete commitment enables companies to prepare for the inevitable changes to their supply chains, future-proof their business and remain economically competitive in the transition to a zero carbon world.

ConcreteZero members are at the forefront of tackling embodied carbon emissions by providing a demand signal that encourages material innovation and taking steps to improve concrete's in-use efficiency. This means they are better positioned to respond to the evolving net zero requirements of clients and investors.

This document is structured as follows: Section 2 outlines the commitment framework ConcreteZero members sign up to, Section 3 provides an overview of the ConcreteZero campaign and how we work to create a market for net zero concrete, and the Appendices offer supplementary information, including key definitions relevant to the minimum commitment criteria.

2. Commitment framework

Leadership commitment

Organisations that join ConcreteZero must be willing to make a public commitment to transition to 100% net zero concrete by 2050, at the latest.

ConcreteZero is a demand-side initiative. Members include organisations that use or procure concrete, such as public procurement bodies, architects, designers, structural engineers and specifiers of concrete, as well as companies involved in the concrete value chain at any stage beyond production (LCA Stages A1-A3[1]).

Organisations are encouraged to commit to the most ambitious and credible interim target that aligns with their strategy. They have the option to review their commitment on an annual basis and adjust it in line with their corporate targets providing it continues to meet the minimum criteria. ConcreteZero members will be actively encouraged to increase their interim commitment where possible.

Organisations must commit to achieving a set of minimum commitment criteria, which have been designed to:

- Send a strong market demand signal to cement and concrete producers, accelerating the transition to net zero concrete production
- Be adoptable by organisations across all concrete-using sectors
- Be globally applicable
- Recognise best practices in each market

Minimum commitment criteria

1. **Baseline commitment:** A commitment to report the volume and carbon intensity of concrete consumption and, where applicable[2], demonstrate that measures are being taken to increase the efficiency of concrete consumption.

[1] Life Cycle Assessment Stages A1-A3 cover lifecycle from raw material extraction (A1), through to transport (A2) and manufacturing of the ready-mix concrete (A3). Ready-mix: cradle to batching plant gate. Precast: cradle to mould.

[2] This will be applicable to all those with the ability to influence the design, procurement and specification of concrete.

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ConcreteZero's reporting framework and guidelines are available separately and undergo a process of continual improvement informed by member feedback. The basic assumptions for meeting the baseline commitment are:

a. The reported data should reflect the planned specification and consumption of concrete, as well as actuals (achieved, including waste), as appropriate;

b. ConcreteZero members will be required to adopt a ConcreteZero-aligned reporting protocol to encourage best practice and support the industry's transition towards data accuracy, information sharing, transparency, and accountability. ConcreteZero reporting includes concrete strength class, carbon intensity, volume, year/month delivered and country of origin;

c. Measures taken to increase the efficiency of concrete consumption will, where applicable, be demonstrated through a written case-study, in which the provision of quantitative metrics (e.g., m^3 concrete (or $kgCO_2e$ of concrete) per m^2 of a building's gross or net internal area) is encouraged; and

d. ConcreteZero members will be expected to report data during the specified reporting periods. The first reporting period after joining the initiative will be treated as an adoption period, allowing members to implement the necessary measurement and reporting processes, and policies that may be needed to meet requirements; and

e. ConcreteZero will report anonymised and aggregated analysis of reported data only[3].

2. **2025 interim commitment** (for members who joined before Sept. 2024 only)**:**
   a. Commitment to specify and procure 30% of total concrete consumption (by volume), meeting carbon intensity no greater than the ConcreteZero Low Embodied Carbon Concrete Threshold as defined in Appendix A.

3. **2030 interim commitment**:
   a. Commitment to specify and procure 50% of total concrete consumption (by volume), meeting carbon intensity no greater than the ConcreteZero Low Embodied Carbon Concrete Threshold as defined in Appendix A.[4]

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[3] Anonymised reporting data from UK-based ConcreteZero members is shared with the LCCG to contribute to the development of its market benchmark. Third-party contractors or partners may work with ConcreteZero to analyse anonymised reporting data.

[4] We recognise that the technological and economic feasibility of this target depends on the markets and concrete applications members specialise in. The ConcreteZero team will consider this reality when analysing members' progress against their commitments and look at how trends across the membership can inform the prioritisation of concrete decarbonisation action.

4. **2050 long-term commitment**: Commitment to procure and specify 100% of total concrete consumption (by volume), meeting the definition of Net Zero Concrete as stated in Appendix B.

3. Campaign overview

Fostering ambition

The ConcreteZero minimum commitment criteria should be seen as just that – a minimum. Notably, the 2030 target is set at a level to allow global participation, reflecting the low availability of data and of low carbon concrete in many markets.

Critically, this should not limit the scope or ambition of any member's decarbonisation goals. ConcreteZero encourages, and will actively support and promote wherever possible, efforts by members to extend their decarbonisation targets through:

- Targeting deeper and faster material decarbonisation
    - Including the development of embodied carbon decarbonisation pathways aligned with the goals set out in the Paris Agreement.
- Developing more granular material decarbonisation targets
    - Leveraging the insight gained from reporting in line with ConcreteZero to develop more specific sub-targets based on concrete application, region or project.
- Addressing concrete efficiency
    - Maximising opportunities to reduce the intensity of concrete use through design, procurement and other levers (e.g. standards and regulations) and the development of appropriate KPIs to monitor it.
- Introducing further sustainability considerations
    - Such as efforts to anticipate and prepare for future iterations of the commitment framework, identify and address any unintended consequences of concrete decarbonisation, and explore whether, and how, mass balance approaches can supplement the physical concrete decarbonisation required by the ConcreteZero targets.
- Collating and cascading the insights from members' efforts to elevate their ambition, for the benefit of the wider membership and the ecosystem as a whole
    - Staying at the forefront of best practice is central to ensuring that the ConcreteZero commitment framework reflects the most up-to-date information available and that the relevancy of the group's demand signal remains appropriate.

Continual improvement is important to ConcreteZero members, and as such the commitment criteria and language will evolve over time to incorporate market and technological developments. This may include the ConcreteZero Low Embodied Carbon Concrete Threshold. Any decisions to change or update the commitment framework will be decided in discussion with ConcreteZero members ahead of adoption. Climate Group reserves the right to make alterations to the minimum commitment criteria if any such changes are required following member consultations.

For a summary of the main changes between this and the previous (2022) version of the commitment framework see Appendix C.

Collective action

ConcreteZero will support organisations in their journey to net zero concrete and in acting on their commitment. Member organisations will be invited to join the ConcreteZero working group, which aims to address and remove barriers to action. Coordinated by the ConcreteZero project team, all members will have the opportunity to shape the agenda and strategy of the group. The working group meets once a quarter and provides a safe and collaborative environment for like-minded organisations to share knowledge, develop practical guidance, showcase leadership and exchange best practices -all aimed at assisting members in fulfilling their commitment to net zero concrete.

ConcreteZero members can also participate in specific technical workstreams dedicated to increasing transparency, building capacity and encouraging knowledge sharing. Topics that align with ConcreteZero members' priorities can be proposed, and workstreams established as needed, subject to agreement. ConcreteZero's technical workstreams may set their own meeting schedule and may choose to host knowledge sharing sessions with the wider membership base on an ad hoc basis. Current workstream focuses include improving embodied carbon measurement and reporting, developing specification guidelines, accelerating policy and standards progress, connecting innovators and producers to ConcreteZero members through the Innovation Hub, and engaging with the insurance and warranty sector.

While the ConcreteZero commitment focuses on the decarbonisation of concrete production, there is scope within the working group to address broader ESG issues within the concrete supply chain. For example, tackling the emissions associated with concrete through efficient design and procurement practices is an area of increasing interest for members. ConcreteZero will consider how to influence effective investments, policies, and regulations needed to address broader ESG issues in concrete procurement, in consultation with its members.

Communications

We use strategic communications to raise the profile of ConcreteZero and to shout about the progressive action of our members. Through progress reports, social media, media, events, and stakeholder engagement we make sure that ConcreteZero is known across the sector. From creating engaging content to shaping impactful media narratives, we amplify the demand signal for sustainably produced concrete -and our members are central to this.

ConcreteZero members can participate in and contribute to:

- Interviews with business and trade journalists and correspondents
- Production of thought leadership pieces
- Profiles, case studies and innovative projects that highlight advancements in embodied carbon emissions reductions and use of low carbon concrete
- Targeted speaking opportunities and participation at key external and Climate Group-led events

Alignment with complementary initiatives

We're collaborating with non-profit partners, climate sector specialists, business associations and academia to provide a more comprehensive approach to tackling the concrete decarbonisation problem and ensure necessary alignment to building demand for net zero concrete. The list is live and therefore non-exhaustive:

American Council for an Energy Efficient Economy (ACEEE)

British Standards Institute (BSI)

Breakthrough Agenda (UNFCCC)

Department of Energy Security and Net Zero (DESNZ)

Climate Works Foundation

Concrete Sustainability Standard

ECOS – Alliance for Low Carbon Cement and Concrete (ALCCC)

First Movers Coalition

Green Market Activation Center

Innovate UK – Advanced Market Commitment project

Infrastructure Client Group (ICG)

International Energy Agency (IEA)

Institute of Structural Engineers (IStructE)

Materials & Embodied Carbon Leaders' Alliance (MECLA – WWF)

Mineral Products Association (MPA)

Mission Possible Partnership (MPP)

Net Zero Carbon Buildings Commitment (WorldGBC)

North Ready-Mix Concrete Association (NRMCA)

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Rocky Mountain Institute (RMI)

Science Based Target Initative (SBTi)

ShareAction

TransFIRE Project (Transforming Foundation Industries Research & Innovation Hub Leeds University)

UK Concrete Decarb Taskforce and Low Carbon Concrete Group (BEIS/ICE)

UN Industrial Deep Decarbonisation Initiative (IDDI)

We Mean Business Coalition

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Appendix A – Requirements for interim commitments

The ConcreteZero Low Embodied Carbon Concrete Threshold is defined as concrete with a GHG emissions intensity less than or equal to the **values set out in the table below.**

Specified strength class[5]	ConcreteZero Low Embodied Carbon Concrete Threshold (Cradle-to-gate embodied carbon) ($kg/CO_2e/m^3$)[6]
C8/10	150
C12/15	165
C16/20	180
C20/25	195
C25/30	210
C28/35	225
C30/37	231
C32/40	240
C35/45	255
C40/50	270
C45/55	285
C50/60	300
C55/67	310.5
C60/75	322.5
C70/85	337.5
C80/95	352.5
C90/105	367.5
C100/115	382.5

[5] First number is the cylinder strength in MPa and the second the cube strength in MPa.

[6] EPDs used to report producer declared embodied carbon ratings for concrete shall be in accordance with BS EN 15804:2012+A2:2019 and BS EN 16757:2022.

The numeric definition in the Table above decouples the ConcreteZero Low Embodied Carbon Concrete Threshold from any one classification system.[7] This allows members the flexibility to use the classification system best suited to the markets in which they operate.

The equivalent of the ConcreteZero Low Embodied Carbon Concrete Threshold on a selection of relevant classification systems is as follows:

- the top of Band C on the GCCA's Global Banding system (Figure 1)
- the top of Band D on the Universal EC Classification system (Figure 2)
- the top of Band 2 on the 2024 LCCG Market Benchmark[8] (Figure 3)

Members can choose to refer to the ConcreteZero Low Embodied Carbon Concrete Threshold using their preferred classification system, not limited to those above, **as long as the corresponding threshold meets the following definition of equivalency:**

To be considered as equivalent, any description of the ConcreteZero Low Embodied Carbon Concrete Threshold must be no more than 10% different, at any individual concrete strength in the range C8/10 to C55/67 and, on average across this same range, represent embodied carbon levels no greater than the numeric definition of the ConcreteZero Low Embodied Carbon Concrete Threshold.

[7] The ConcreteZero Low Embodied Carbon Concrete threshold has been developed using market data from the UK (LCCG market benchmark), and with reference to other sources of data including from the US (NRMCA data), Finland (Finnish Concrete Association) and Australia (MECLA).

[8] As this is a dynamic benchmark and updated annually, its equivalency with the ConcreteZero Low Embodied Carbon Concrete Threshold may change over time.

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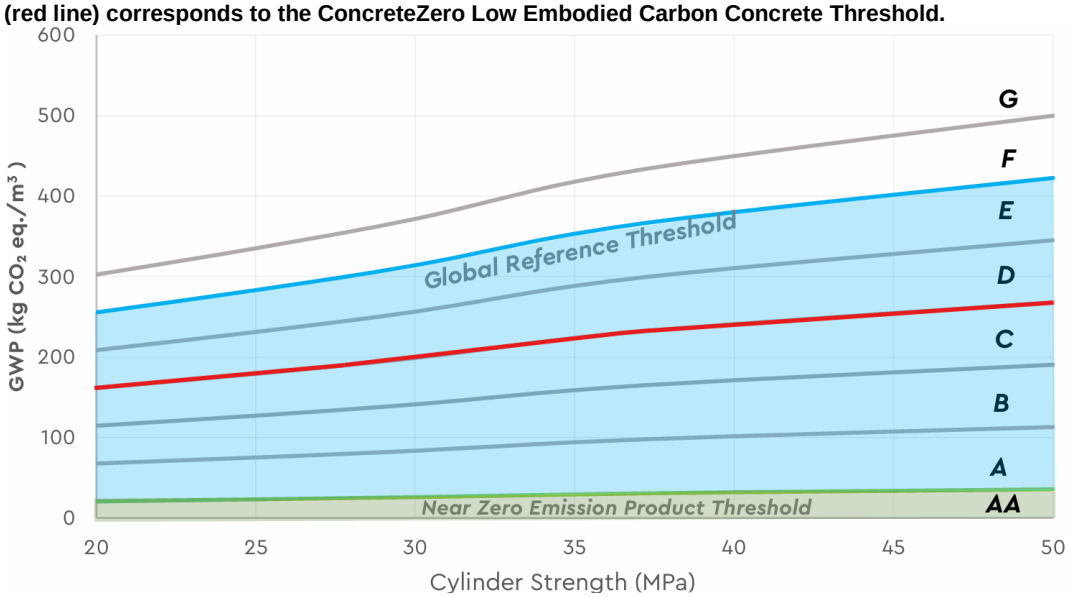
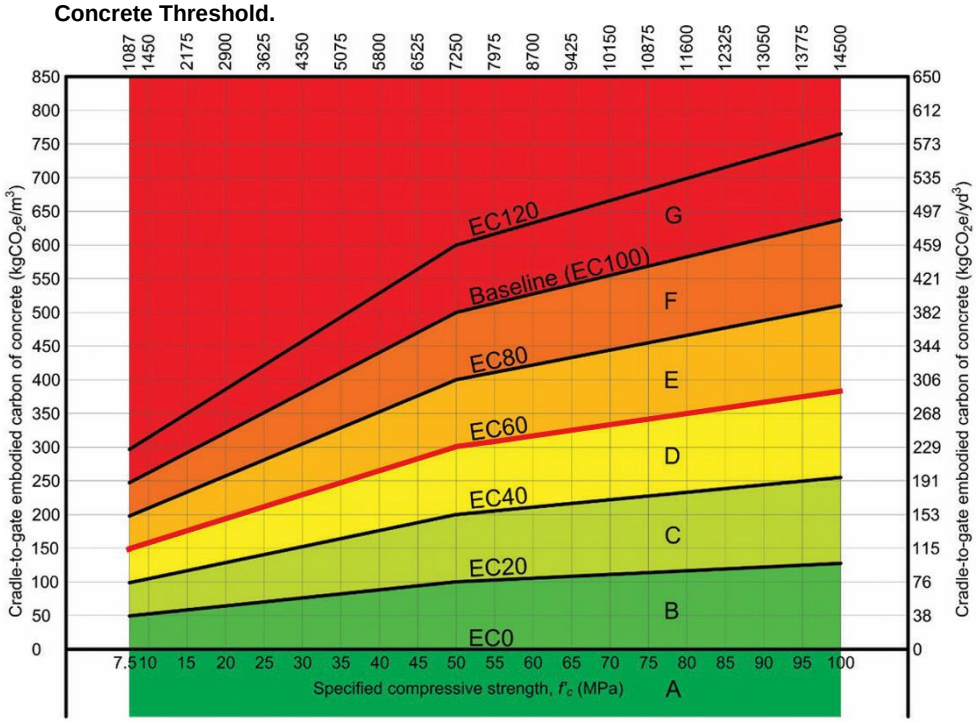
Figure 1: The GCCA Global Banding system following the metric unit system. The top of Band C (red line) corresponds to the ConcreteZero Low Embodied Carbon Concrete Threshold.



Source: Numerical Definitions for Low Carbon and Near Zero Emissions Concrete, GCCA 2024

Figure 2: The Universal EC classification system following both metric and imperial unit systems. The top of Band D (red line) corresponds to the ConcreteZero Low Embodied Carbon Concrete Threshold.



Source: Embodied Carbon Classification System for Concrete in the United States, Concrete International. The Universal EC Classification System presenting embodied carbon in $kgCO_2e/m^3$ against specified strength class can be found here.

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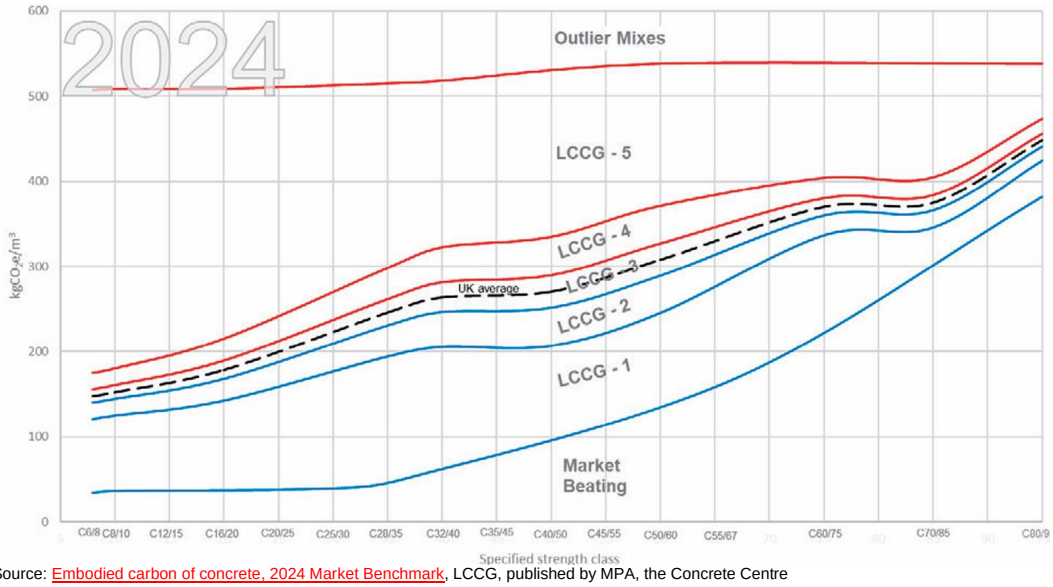
Figure 3: The 2024 LCCG Market Benchmark, where the top of Band 2 corresponds to the ConcreteZero Low Embodied Carbon Concrete Threshold.



Source: Embodied carbon of concrete, 2024 Market Benchmark, LCCG, published by MPA, the Concrete Centre

Further information on the classification methodologies referred to above can be found in the 2024 paper ConcreteZero - Classification methodology for embodied carbon.

Appendix B – Net zero concrete definition

The SBTi's Net-Zero Standard - Outlines what companies need to do to enable the global economy to achieve net-zero. The standard makes clear that corporate net-zero targets, in line with keeping global warming to 1.5°C, require rapid and deep emission reductions. Companies must take action to halve their emissions by around 2030. Likewise, long-term deep emissions cuts of at least 90% before 2050 are crucial for net-zero targets to align with science.

Net zero concrete (in alignment with the SBTi Net Zero Standard) - for concrete, it means GHG emissions intensity minimised to be as close as operationally possible to zero metric tonnes of CO_{2e} /m^3 of concrete (at least 90% through mitigation) using known, innovative technologies. Only remaining residual emissions to be removed or offset as a last resort, using a high quality and recognised offsetting framework.

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Appendix C – Main changes made in this revision of the ConcreteZero commitment framework

This is a summary of the main changes to the ConcreteZero commitment framework, in comparison with the previous (2022) version. The aim of the revision was to incorporate the latest knowledge and market insight, and to improve global accessibility to the ConcreteZero initiative. The main changes were:

- Decoupling the ConcreteZero Low Embodied Carbon Concrete Threshold from the LCCG Market Benchmark to provide members and other stakeholders the flexibility to refer to their preferred classification system.
  - To improve the global relatability and accessibility of the ConcreteZero initiative
- Introducing the requirement to demonstrate material efficiency measures for members where this is applicable.
  - To better understand how material efficiency is being approached and measured, as well as to identify and cascade best practice examples.
- Recognition of the technological, market and other barriers that might prevent members from meeting their 2030 interim target.
  - To make the ConcreteZero initiative more accessible to members in regions where data availability on the embodied carbon of concrete is poor, and allow us to better understand, elevate and collectively address challenges members are facing in meeting their ConcreteZero commitments.
- Addition of the section on fostering ambition.
  - To formalise ConcreteZero's aim to be at the forefront of supporting and promoting the advances being spearheaded by its members.

Appendix D - ConcreteZero project partners

Climate Group is an international non-profit, launched in 2004, with offices in London, Amsterdam, Beijing, New Delhi, and New York. Our mission is to drive climate action, fast. Our goal is a world of net zero carbon emissions by 2050, with greater prosperity for all. We do this by forming powerful networks of business and government, unlocking the power of collective action and scale to move whole systems such as energy, transport, industry, and food to a cleaner future. Together, we're helping to shift global markets and policies towards faster reductions in carbon emissions.

The World Green Building Council (WorldGBC) catalyses the uptake of sustainable buildings for everyone, everywhere. Transforming the building and construction sector across three strategic areas — climate action, health & wellbeing, and resources &

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circularity — we are a global action network of 70 Green Building Councils around the world. As members of the UN Global Compact, we work with businesses, organisations, and governments to drive the ambitions of the Paris Agreement and UN Global Goals for Sustainable Development. Through systems change approach, our network is leading the industry towards a net zero carbon, healthy, equitable and resilient built environment.

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