

ECO-MAX

High Performance, **Low Carbon**

A true low carbon concrete



Introducing New Zealand's
environmentally friendly concrete

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Introduction to Eco-Max Concrete

Eco-Cem is made locally in Mount Maunganui, New Zealand. Eco-Max is made with a mix of Eco-Cem and Xtra-Cem (GP) cement to create a superior concrete with 20-65 percent less carbon.

Concrete mix designs can be customised allowing you to balance construction aspects such as setting time, strength gain, finishing and cost. It's not only an environmentally friendly choice, it's more durable and has an enhanced design life.



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Key Benefits



High Performance

Eco-Max concrete containing Eco-Cem offers enhanced durability, improved resistance to chemical attacks, and reduced heat of hydration, leading to longer-lasting and more sustainable structures.



Durability

Eco-Max concrete is hard wearing with a denser finish, meaning a longer design life and better chemical and stain resistance.



Low Shrinkage

Eco-Max concrete has better shrinkage performance compared with concrete made using standard GP cement.



Cost Competitive

Eco-Max is a cost-competitive product when compared with concrete made using standard GP Cement.



Reduced Thermal Expansion

Eco-Max is ideal for large concrete pours, as it reduces the risk of thermal cracking.



Reduced Alkali Aggregate Reaction

Using Eco-Cem in Eco-Max concrete helps to minimise the risk of alkali-silica reaction (ASR).



Superior Finish

Eco-Max concrete has a creamier and denser finish, which creates an overall superior finish to your concrete projects.



Lower Embodied Carbon

Eco-cem is an SCM (Supplementary Cementitious Materials) which partially replaces GP cement in Eco-max concrete. The result is 20-65% less embodied carbon. We are doing our part to create a sustainable future for New Zealand.



True GP Cement Replacement

Eco-Max concrete used Eco-Cem to replace up to 65% of the GP cement. GP cement contains **812kgs** of embodied carbon per tonne, whereas Eco-Cem contains only **149kgs** per tonne.



Proven
performance
worldwide

Available SCM/Pozzolan Options

	SCMs (as byproducts)			Natural SCM
	Blast Furnace Slag (GGBFS) <i>Iron industry</i>	Fly Ash <i>Coal-fired power</i>	Silica Fume	Volcanic ash <i>e.g. pumice</i>
Substitution rates	65%	20-30%	<10%	<25%
Availability	Local: Available year round Imported: Variability issues	Local: Available May-November only Imported: High container prices	All imported	Not commercially available
Price	Cost-competitive price Please contact us	Local: Similar price as cement Imported: More expensive	Expensive	N/A
NZS3101:2006 Durability	Yes	Yes	Yes	No



Hardworking
concrete that's easy
on the planet

ECO-CEM

Specifying and Designing

- ▶ NZS3104:2021 allows for 56 day testing of concrete with SCM
- ▶ NZS3101 - durability, 65% BFS mixes
- ▶ Eco-Max % replacement can be specified on a project basis
- ▶ Cement substitutions with Eco-Max

A Change in Philosophy

With the introduction of this innovative product into the New Zealand market, the design and build process will need to adapt accordingly in line with a more sustainable product that is recognised and proven globally.

Collaboration is Key

Working together alongside engineers, architects, contractors and ready mix is key to ensure the right balance of application for various seasons and onsite demands to maximise the dose of Eco-Cem.



Embodied Carbon Reduction

We have developed the ratings in the graph below to give you an indication of our Embodied Carbon reductions across various products.

	20 MPa	25 MPa	30 MPa	35 MPa	40 MPa	45 MPa	50 MPa	
ISC 2020 Baseline	284	313	347	391	441	495	550	Global Warming Potential (GWP) (Embodied carbon per m ³)
ECO-MAX - 15% Replacement CO₂ Reduction	207 27%	232 26%	258 25%	288 26%	317 28%	345 30%	373 32%	
ECO-MAX - 25% Replacement CO₂ Reduction	190 33%	211 33%	234 33%	262 33%	288 34%	313 36%	337 39%	
ECO-MAX - 35% Replacement CO₂ Reduction	171 40%	191 39%	211 39%	235 40%	258 41%	280 43%	302 45%	
ECO-MAX - 45% Replacement CO₂ Reduction	154 46%	170 46%	188 46%	209 46%	229 48%	248 50%	267 51%	
ECO-MAX - 55% Replacement CO₂ Reduction	135 52%	150 52%	165 52%	182 53%	199 55%	215 56%	232 58%	
ECO-MAX - 65% Replacement CO₂ Reduction	118 58%	129 59%	141 59%	156 60%	170 61%	183 63%	196 64%	

ISC 2020 Baseline is from the Infrastructure Sustainability Council 2020 Baseline.

CO₂ Reduction % is calculated from the ISC 2020 Baseline.

Percentage replacement values have been calculated from our inhouse LCA Mix calculator.

Above values are calculated on 19mm Standard mixes for Gisbourne, other regions and mixes will vary slightly.

For technical information please refer to HR Cement Ltd product data sheet for Eco-Cem.

For more information on suitability and achievable CO₂ reductions please contact your local representative.



Get in Touch

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Environmental Product Declaration

An Environmental Product Declaration (EPD) is an independently produced report of the effects across a wide variety of criteria. The EPD for our GP Cement Xtra-Cem was produced by Thinkstep, a well known and very reputable NZ based company, and published in February 2022.



Up to a 65% reduction in
our carbon footprint when
compared with standard
GP cement.

