ECO-CEM
High Performance, Low Carbon

HR CEMENT limited

taranakimix
Ready-Mix, Ready-Now

ECO-MAX

High Performance, Low Carbon

A true replacement of embodied carbon cement

Introducing our region's most sustainable concrete

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Introduction to Eco-Max Concrete

Eco-Cem is made locally in Mount Maunganui, New Zealand using blast furnace slag (BFS). Eco-Max concrete is made with a mix of Eco-Cem and Xtra-Cem (GP) cement to create a superior product 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.

ECO-MAX

High Performance, Low Carbon

Eco-Cem is made using Blast Furnace Slag (BFS). Commonly used overseas, BFS is a by-product of steel production that we re-purpose into a low carbon cement substitution material with superior durability to traditional cement. It's the first of its type available and made here in New Zealand.

Eco-Cem is used together with our GP cement Xtra-Cem in different measures depending on your application, making a bespoke, more durable concrete product with better resistance to wear and tear that reduces your carbon footprint by up to 65%.

Locally-made Eco-Cem is a low-carbon cement substitute which has been thoroughly tested and years in the making.

Proven performance worldwide

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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 a 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 uses Eco-Cem to replace up to 65% of the GP cement. GP cement contains **829kgs** of embodied carbon per tonne, whereas Eco-Cem contains only **164kgs** per tonne.

Available SCM/Pozzolan Options

	SCMs (as byproducts)			Natural SCM
	Blast Furnace Slag (GGBFS) *Iron industry*	**Fly Ash** *Coal-fired power*	**Silica Fume**	**Volcanic ash** *e.g. pumice*
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

*BFS is a by-product of iron production and is used in construction to enhance concrete, durability and sustainability.

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
ECO-MAX - 15% Replacement CO_2 **Reduction**	213 25%	223 29%	246 29%	271 30%	299 32%	337 32%	379 31%
ECO-MAX - 25% Replacement CO_2 **Reduction**	197 30%	207 34%	229 34%	251 36%	276 37%	311 37%	348 37%
ECO-MAX - 35% Replacement CO_2 **Reduction**	183 36%	192 39%	211 39%	231 41%	254 42%	285 42%	318 42%
ECO-MAX - 45% Replacement CO_2 **Reduction**	169 40%	176 44%	194 49%	211 46%	231 48%	258 48%	288 48%
ECO-MAX - 55% Replacement CO_2 **Reduction**	154 46%	161 49%	176 49%	191 51%	208 53%	232 53%	258 53%
ECO-MAX - 65% Replacement CO_2 **Reduction**	139 51%	145 54%	159 54%	171 56%	186 58%	206 58%	227 58%

Global Warming Potential (GWP)
(Embodied carbon per m^3)

ISC 2020 Baseline is from the Infrastructure Sustainability Council 2020 Baseline.
CO_2 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 Taranaki Mix, 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 CO_2 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.