# ECOMAX RMC

HIGH PERFORMANCE LOW-CARBON

## A true replacement of embodied carbon cement



## Introducing New Zealand's environmentally friendly concrete

# READY MIX CONCRETE

HR CEMENT limited

ECO-CEM® High Performance, Low Carbon

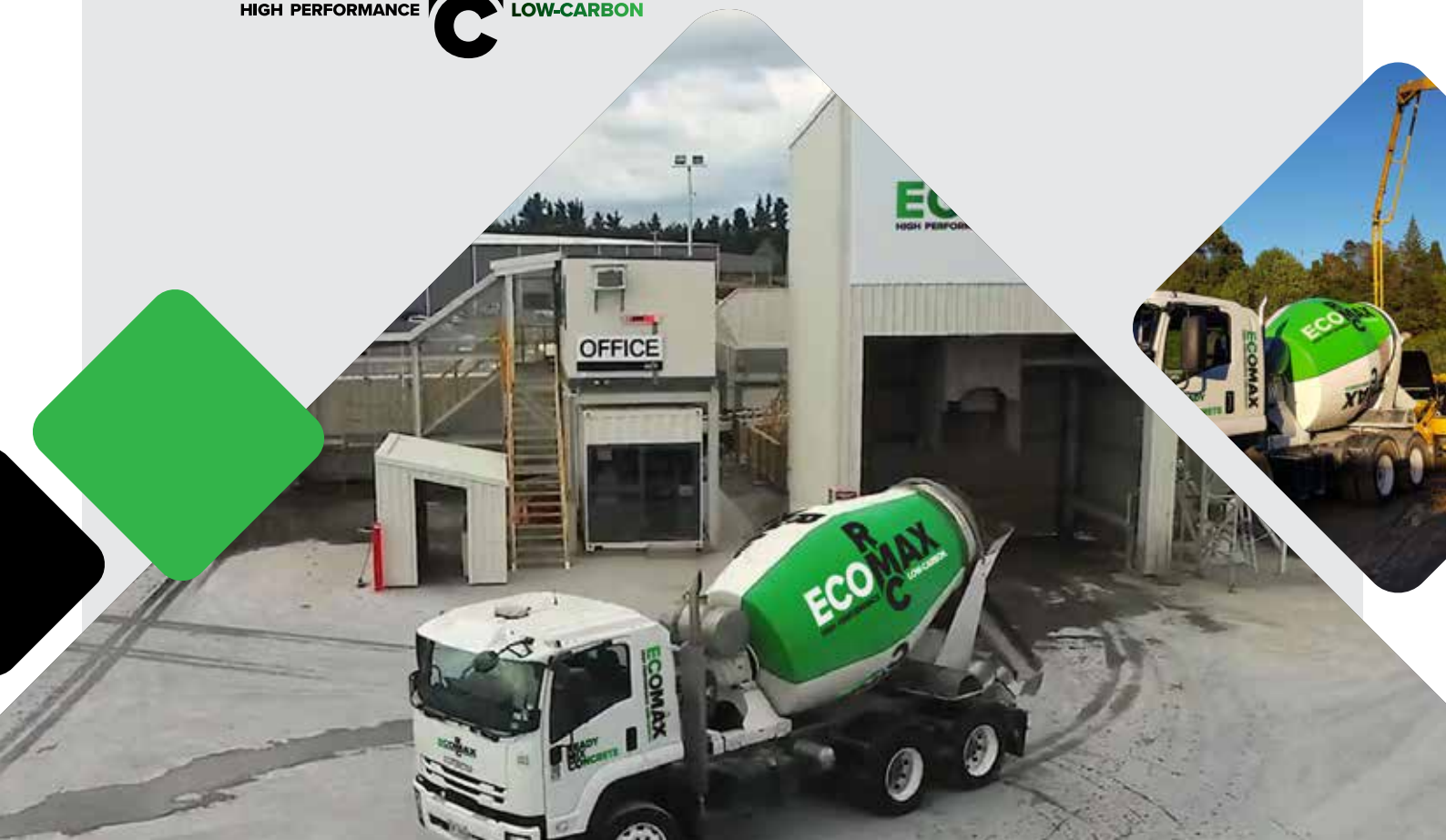
XTRA-CEM High Performance OPC

## Introduction to ECOMAX-RMC Concrete

ECO-CEM is made locally in the Bay of Plenty, right here in New Zealand. ECOMAX-RMC 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 customized 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.

ECOMAX RMC HIGH PERFORMANCE LOW-CARBON



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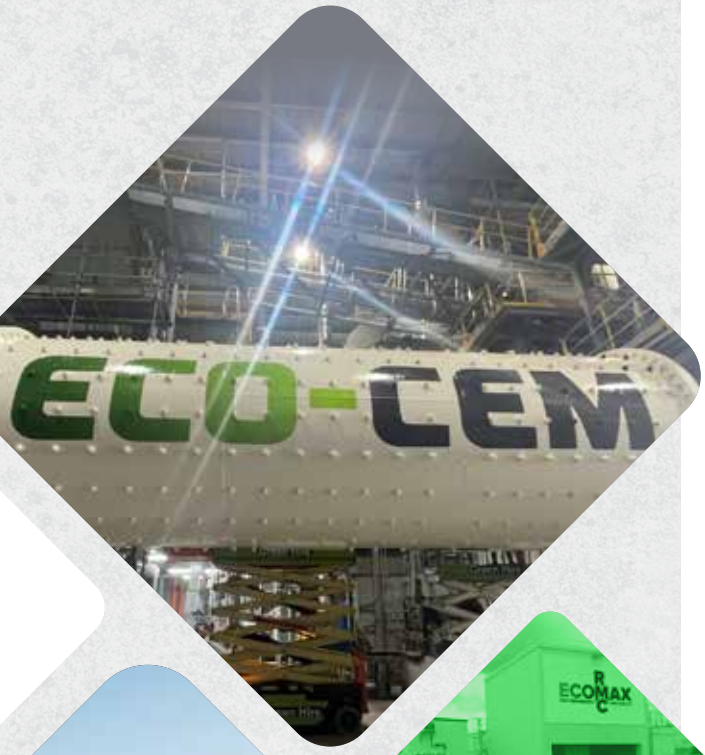






Proven performance worldwide

## Key Benefits

### High Performance
ECO-CEM cement has a creamier finish and shrinks less, therefore produce better foundations, floors and precast panels.

### Durability
ECOMAX-RMC is hard wearing with a denser finish meaning a longer design life and better chemical and stain resistance.

### Low Shrinkage
Concrete made with ECO-CEM has a lower shrinkage performance.

### Cost Competitive
ECOMAX-RMC is a cost competitive product with standard GP Cement.

### Reduced Thermal Expansion
ECO-CEM is ideal for large concrete pours as it reduces the risk of thermal cracking.

### Reduced Alkali Aggregate Reaction
ECO-CEM helps to minimise the risk of alkali-silica reaction in concrete.

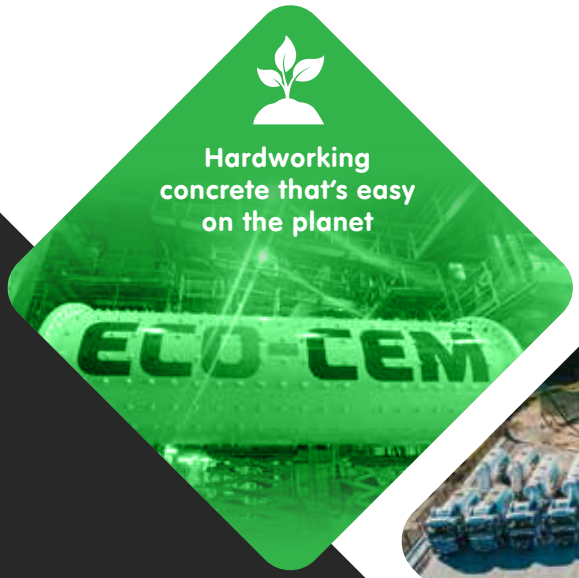
### Superior Finish
Pozzolanic cements have a creamier and denser finish which create an overall superior finish to your concrete projects.

### Lower Embodied Carbon
The SCMs (Supplementary Cementitious Materials) substitutes the cement and creates 20-65% less embodied carbon which means we are doing our part to create a sustainable future for New Zealand.

### True GP Cement Replacement
ECOMAX-RMC concrete can replace up to 70% of GP cement. GP cement contains **818kgs** of embodied carbon per tonne, where ECO-CEM contains only **115kgs** per tonne.

# Available SCM/Pozzolan Options

| | Recycled SCM | | | Natural SCM |
|---|---|---|---|---|
| | **BFS - Blast Furnace Slag** *steel industry* | **Fly Ash** *power industry* | **Silica Fume** *numerous sources* | **Pumice/Volcanic ash** |
| **Substitution rates** | Up to 65% | 20-30% | <10% | <25% |
| **Availability** | Not previously available | **Local:** available May-November only **Imported:** high container prices means no imports | Imported | Not commercially available. Fully investigated by HR Cement but not commercially viable |
| **Price** | We can produce this product at a cost-competitive price. | **Local:** similar price as cement **Imported:** much more expensive | to 80%) | to 80%) |
| **NZS3101:2006 Durability** | Yes | Yes | Yes | No |




# Specifying and Designing

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

## 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.

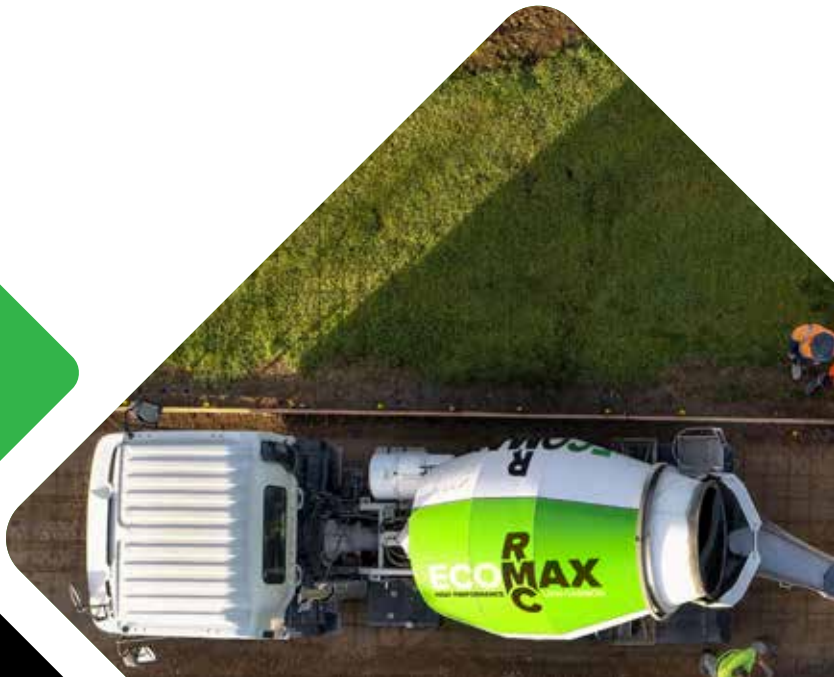
# Embodied Carbon Reduction

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 |
| **ECOMAX-RMC - 15% Replacement $CO_2$ Reduction** | 228<br>20% | 245<br>22% | 268<br>23% | 281<br>28% | 305<br>31% | 323<br>35% | 355<br>35% |
| **ECOMAX-RMC - 25% Replacement $CO_2$ Reduction** | 208<br>27% | 224<br>28% | 244<br>30% | 256<br>34% | 278<br>37% | 293<br>41% | 322<br>41% |
| **ECOMAX-RMC - 35% Replacement $CO_2$ Reduction** | 188<br>34% | 202<br>36% | 220<br>37% | 231<br>41% | 250<br>43% | 265<br>47% | 290<br>47% |
| **ECOMAX-RMC - 45% Replacement $CO_2$ Reduction** | 169<br>41% | 181<br>42% | 196<br>44% | 206<br>47% | 223<br>49% | 235<br>53% | 258<br>53% |
| **ECOMAX-RMC - 55% Replacement $CO_2$ Reduction** | 146<br>49% | 159<br>49% | 173<br>50% | 182<br>53% | 196<br>56% | 206<br>58% | 225<br>59% |
| **ECOMAX-RMC - 65% Replacement $CO_2$ Reduction** | 129<br>55% | 135<br>57% | 149<br>57% | 156<br>60% | 169<br>62% | 177<br>64% | 193<br>65% |

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 reviewed and verified by thinkstep Ltd.
Above values are calculated on 20mm Standard mixes for Waikato, 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.