EcoCem™*PLC* is here!

EcoCem™*PLC* is Lehigh's Portland Limestone Cement that meets CSA's Type GUL specification. EcoCem™*PLC* is an environmentally responsible cement that delivers excellent performance along with a lower carbon footprint. This *made in BC* cement reduces greenhouse emissions and supports our local economy at the same time.

The EcoCem™*PLC* Advantage

Lehigh Cement's Commitment to Sustainability

Lehigh Cement is committed to delivering sustainable building materials which positively contribute to the welfare of society and to the environment – during and after our lifetime. Cement and concrete products already contribute to sustainable buildings and communities across British Columbia. Concrete structures are safe, energy-efficient, durable and cost-effective.

As the next step in its commitment to sustainability, Lehigh Cement has developed EcoCem™*PLC*, a new portland limestone cement that provides excellent performance but has a lower environmental impact than normal Type GU portland cement.

Lowering Emissions

Climate change and clean air are important to the people of British Columbia and they are important to Lehigh Cement. The process of converting raw minerals into cement produces emissions, and reducing these emissions is central to Lehigh's commitment to sustainability. Manufacturing EcoCem™*PLC* can result in up to a 10% reduction in emissions when compared to normal Type GU portland cement. With EcoCem™*PLC*, Lehigh and its customers now have an effective means to make real and verifiable emission reductions. The ability to use cement that has a smaller carbon footprint, and still has excellent performance, is now possible by using EcoCem™*PLC*.

Green Building and LEED®

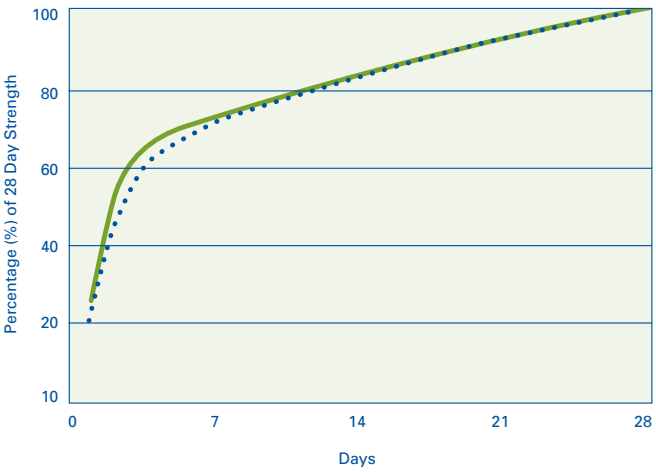
British Columbia has approved the use of portland limestone cement in its building code. The opportunity now exists to be on the leading edge of sustainable construction by using EcoCem™*PLC*, an environmentally friendly cement for concrete production. In combination with available supplementary cementing materials (SCMs), EcoCem™*PLC* allows the production of concrete with the lowest carbon footprint possible.

There are currently no LEED® Credits specific to the use of EcoCem™*PLC*; however it may contribute toward points available in LEED® Canada NC 1.0 and 2009. Because it is locally manufactured, EcoCem™*PLC* dramatically reduces the emissions associated with the transportation of cementing materials.

Performance

The performance of EcoCem™*PLC* is similar to normal Type GU portland cement. Concrete produced with EcoCem™*PLC* achieves higher earlier strengths and comparable longer term strengths. (See graph). In testing with local SCMs, EcoCem™*PLC* shows excellent performance at all ages. Setting times of EcoCem™*PLC* concrete are comparable to those with normal Type GU portland cement. Additional positive aspects include: improved workability, less bleeding and lower overall heat of hydration.

EcoCem™*PLC* vs Type GU
Strength Gain



EcoCem™*PLC*

Type GU

Notes: Graph represents a typical 30 MPa concrete mix utilizing 20-25% fly ash. Strength gain may vary depending on mix strength, total cementing materials and SCM content.

Frequently Asked Questions

What is EcoCem™*PLC?*
EcoCem™*PLC* is a new portland limestone cement developed by Lehigh Cement for the Canadian market. EcoCem™*PLC* is produced using the same components as normal Type GU portland cement, however it is processed differently to achieve a more environmentally friendly product.

Does EcoCem™*PLC meet CSA specifications?*
EcoCem™*PLC* is manufactured to meet the rigid requirements of the CSA A3001-08 Cementing Materials Compendium. EcoCem™*PLC* meets Type GUL specifications.

Has PLC been adopted by the applicable standards and building codes?
PLC is included in the latest edition of CSA A3000-08 (Cementitious Materials Compendium) and in the latest edition of CSA A23.1/2-09 (Concrete Materials and Methods of Construction).

The British Columbia Building Code was amended in October 2010 to allow the use of PLC. The next edition of the National Building Code of Canada will reference the noted CSA standards also.

What is the history of PLC usage?
PLC cement has been used extensively and successfully in Europe for over 40 years.

Is EcoCem™*PLC compatible with SCMs and admixtures?*
EcoCem™*PLC* works extremely well with locally available SCMs, especially fly ash. No admixture incompatibility issues have been observed with properly designed mixes.

How is the setting time in concrete affected by using EcoCem™*PLC?*
Setting times are not significantly different than concrete produced with similar Type GU mixes.

Is there an increased potential for efflourescence when using EcoCem™*PLC?*
Effloresence is the result of calcium hydroxide, a water soluble hydration product, present in all concrete and other dissolved salts in the concrete. Efflourescence is not caused by ground limestone in cement.

Are there durability issues in concrete produced with EcoCem™*PLC?*
Both European and North American research to date has indicated that, compared to using normal portland cement, equivalent durability performance can be expected from equivalent strength concrete made with PLC.

Can EcoCem™*PLC be used in sulphate exposure conditions?*
Testing is ongoing to determine the performance of PLC cements in a sulphate environment. Currently, the CSA concrete specification CSA A23.1-09 does not allow PLC cements to be used when sulphates are present.

Some of the above material was referenced from Cement Association of Canada published documents.

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Please contact your Lehigh representative for specific product information, availability and ordering.

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Lehigh Cement, a division of Lehigh Hanson Materials Limited