

GIVE ME ONE
GOOD REASON
I SHOULD
SWITCH TO
PORTLAND-
LIMESTONE
CEMENT.



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ILLINOIS
CEMENT
COMPANY

HERE ARE 5 GOOD REASONS TO SWITCH TO PORTLAND-LIMESTONE CEMENT.

Portland-limestone cement, referred to as PLC or specified as ASTM C595 Type IL cement, is the next generation of engineered hydraulic cement containing between 5 and 15 percent limestone by mass. Type IL cement has improved performance characteristics and its manufacture generates less CO₂ over conventional portland cement.



#1

IT'S STRONGER

Because limestone is softer than clinker, when the two are ground together, the resulting limestone particles are finer than the clinker particles — producing enhanced particle packing and paste density. The fine limestone particles act as dispersed sites on which the formation of hydration products initiates, further densifying the microstructure as hydration proceeds. The net result is that chemical and physical properties can be optimized to produce stronger concrete with lower porosity and more durability than conventional portland cement.

#2

IMPROVED DURABILITY WITH SCMs

Supplementary cementitious materials (SCMs), such as fly ash and slag cement, help optimize the strength and durability of concrete, and are present in many of today's mixes. PLCs are compatible with all SCMs. In addition, beneficial chemical reactions occur between the limestone in the PLC and alumina in fly ashes and slag cements to reduce porosity, thus making concrete even more durable.



“Through our testing and research we have found the overall performance of PLC cement to be comparable to, if not outperform, our existing Type I/II cement. This in combination with the smaller carbon footprint is a win win for the industry and environment.”

Vice President, Ready-mix Concrete Producer

#3

IMPROVED FINISHABILITY

Mixtures for concrete projects need to be designed with finishability in mind. PLC’s precise formulation provides an enhanced paste structure that results in easier, more efficient placement and finishing, as well as superior surface characteristics. And concrete produced with PLC is lighter in color — often preferred in aesthetic applications.

“Concrete with PLC is very workable and finishes nicely.”

Concrete Superintendent, Commercial Concrete Contractor

#4

BETTER SULFATE RESISTANCE

Sulfate resistance is improved with PLC, compared to conventional portland cements. PLC provides greater protection, whether sulfate exposure levels require SCMs or not for mitigation. The potential for deterioration, cracking and resultant rebar corrosion is reduced, yielding a higher level of performance and longer service life in sulfate environments, such as wastewater treatment, seawater exposure, and sulfate soil contact.

#5

BETTER FOR THE ENVIRONMENT

Using PLC helps our environmental footprint by reducing energy consumption and emissions, including carbon dioxide (CO₂). Compared with conventional portland cement, PLC decreases the amount of clinker required per ton of finished cement by optimizing the quantity of ground limestone. Ton for ton, PLC needs less energy to produce, and generates less CO₂ from calcination and fossil fuel combustion.

Production of PLC can reduce embodied CO₂ emissions in each ton of cement by up to 10 percent.



PORTLAND-LIMESTONE CEMENT IS A WIN WIN.

Portland-limestone cement is a next generation alternative to traditional portland cement. It is better for the planet and the construction industry because it reduces energy usage, CO₂ emissions and improves concrete sustainability.

ACI and ICC building codes along with AIA Masterspec permit the use of ASTM C595 cement.



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