



CPG Tools for Success

Type IL Cement & SCMs – What You Need to Know

This article summarizes key information from "Type 1L Cement is Here to Stay," by Jennifer Mizer, The Euclid Chemical Company, published in ForConstructionPros.com (July 2026), along with additional industry resources.

The concrete industry has undergone significant changes with the widespread use of **Supplementary Cementitious Materials (SCMs)** and the adoption of **Type IL (1L) Portland Limestone Cement (PLC)**.

Type IL cement is an environmentally friendly, lower-carbon alternative to traditional Type I/II portland cement. It achieves a reduced carbon footprint by replacing approximately **5% to 15% of the energy-intensive clinker** with finely ground limestone (ASTM C595).

Type IL cement is manufactured to provide performance equivalent to traditional Type I/II cement (ASTM C150). However, experience across the industry has shown that **field behavior is not always identical**. Understanding these differences and adjusting construction practices accordingly will help ensure successful concrete placement and long-term durability. Simply put—it isn't your grandfather's concrete anymore.

What to Pay Attention To:

Chemistry

The finely ground limestone improves particle packing, reducing void space within the cement paste and creating a denser microstructure. It also accelerates the formation of **calcium silicate hydrate (C-S-H)**, the primary hydration product responsible for concrete strength.

Workability

Contractors may notice changes in the fresh concrete's **rheology**, its feel, flow, and finishing characteristics. The finer cement particles can increase water demand, affecting workability retention and finishing response. Proper use of water-reducing admixtures is often critical to optimize mixture performance. Understanding local materials and conducting preconstruction meetings have become more important than ever.

Bleeding Characteristics & Moisture Management

Reduced bleeding and slower upward migration of bleed water are common with Type IL concrete mixtures. Without sufficient bleed water reaching the surface, rapid moisture loss can contribute to:

- Surface crusting
- Plastic shrinkage cracking
- Craze

Contractors relying on visual cues developed over years of experience with traditional cement may misjudge when the concrete is ready for finishing.

Finishing Requires Greater Precision

A dry-looking surface does **not** necessarily mean the concrete is ready for finishing.

Premature floating or troweling can densify the surface before moisture and entrapped air have escaped. As hydration continues, these trapped materials can create weak zones beneath the surface, increasing the potential for:

- Blistering
- Delamination
- Surface scaling
- Reduced long-term durability

Evaporation Control is Critical.

Proper evaporation control mitigation strategies and timely curing is important to protect both surface quality and overall performance.

- Know the concrete surface evaporation rate on the jobsite: preplan for tomorrow, real time now, etc.
- Exercise the use of tools to establish the evaporation rate: ACI 305R - nomograph, PourDay.com, Kestrel Weather Station, etc.

- Mitigate excessive evaporation rates using strategies to control the surface conditions: wind breaks, evaporation retarders, proper field crew on hand, prompt curing post placement, use the right mix design for the right job, consult ready mix producer and designers ahead of time, etc.
- Refer to CPG Tools for Success: Evaporation Rates on Concrete Surfaces at Placement (<https://concretepromotion.com/educational-posters/>)

Curing Is More Important Than Ever

The importance of curing has not changed—but the consequences of inadequate curing may be more severe with today's mixtures. Curing often needs to begin sooner than many contractors have traditionally practiced. Delays between final finishing and curing allow excessive moisture loss during one of the most critical stages of hydration. Concrete needs water to hydrate.

Premature moisture loss can slow hydration, resulting in:

- Reduced strength development
- Increased permeability
- Lower durability
- Greater susceptibility to freeze-thaw damage and chloride intrusion

Proper curing improves surface hardness, minimizes drying shrinkage, and enhances long-term durability.

Admixtures & Mixture Optimization

Today's Type IL mixtures rely on carefully engineered admixture products to balance:

- Workability
- Setting characteristics
- Strength development
- Durability

Water reducers, hydration stabilizers, accelerators, and viscosity-modifying admixtures all play important roles. However, admixture compatibility can be more sensitive with Type IL cement than with traditional mixtures.

Strength Development & Construction Scheduling

Type IL cement is fully capable of achieving specified compressive strengths. However, contractors should avoid assuming strength gain will follow the same timeline as previous projects using traditional cement. Type IL, when combined with SCMs, may alter the initial strength development influencing:

- Finishing operations
- Form removal
- Saw-cut timing
- Post-tensioning schedules
- Opening pavements or structures to traffic

Adapting to the Next Generation of Cementitious Materials

Type IL cement represents only the beginning of the next generation of sustainable cementitious materials. As additional low-carbon technologies continue to emerge, a deeper understanding of concrete materials, hydration, curing, and construction practices will become increasingly valuable—and necessary—for everyone involved in concrete construction.

Bottom Line

Type IL cement and SCMs can produce concrete that is every bit as strong and durable as traditional mixtures, but they demand greater attention to construction practices. Success depends on understanding the material, protecting moisture during placement, adjusting finishing techniques, optimizing admixtures, and curing concrete properly. The concrete hasn't become more difficult—it has become less forgiving.

References

- Jennifer Mizer. *Type 1L Cement is Here to Stay*. ForConstructionPros.com, July 2026.
Link to full article: <https://www.forconstructionpros.com/concrete/equipment-products/concrete-materials/article/22970030/the-euclid-chemical-company-type-il-cement-plc-guide-for-concrete-contractors>

More References on this Topic

- *Interior Slab Mixes with IL Cement Study* by ASCC & ACI 302, American Society of Concrete Contractors (ASCC).
- *Field Guide to Placing and Finishing Type IL Cement Concrete*. Concrete International, August 2025.
- *Portland Limestone Cement (CIP Series)*, National Ready Mixed Concrete Association.