

BLENDED CEMENTS (TYPE 1L)

BEST PRACTICES QUICK GUIDE



MIX DESIGN & PLACEMENT

- ▶ **Water Demand:** Expect slightly higher water demand and reduced bleeding; this may vary on the type of blended cement. Strictly control $w/cm \leq 0.45$.
- ▶ **Air Content:** Maintain $6.5 \pm 1.5\%$ entrained air for freeze – thaw durability.
- ▶ **Admixtures:** Adjust water reducers, accelerators, or retarders as needed—trial batches strongly recommended.
- ▶ **Placement Timing:** Anticipate variable set times and plan for proper manpower/equipment.

FINISHING

- ▶ **Window of Finishability:** Type IL often has a shorter and less predictable finishing window. Other blended cements may have variable finishing windows.
- ▶ **Avoid Overworking:** Delayed bleeding can trap water at the surface, leading to delamination.
- ▶ **Finishing Aids:** Use colloidal silica products (e.g., Day 1, E5, etc.) to reduce crusting, improve surface density, and extend workability.
- ▶ **Evaporation Retarders:** Use evaporation retarder products to reduce plastic shrinkage cracking, rapid evaporation on the concrete surface.
- ▶ **Weather Sensitivity:** More prone to plastic shrinkage and crusting—monitor evaporation rate (stay below $0.2 \text{ lb/ft}^2/\text{hr}$).



CURING

- ▶ **Start Immediately:** Apply curing methods as soon as final finishing is complete—do not wait for bleed water.
- ▶ **ACI 308 Guidance:** Initial, intermediate, and final curing should all be planned.
- ▶ **Methods:** Use curing compounds (ASTM C309 or C1315 compliant), wet curing, or coverings. Ensure continuous, uniform coverage.
- ▶ **Duration:** Maintain curing until at least 70% of design strength is achieved (often 7+ days depending on conditions).

SEALING & LONG-TERM PROTECTION

- ▶ **Cure-then-Seal Sequence:** For best durability, apply a curing compound first, then follow up with a penetrating sealer (silane/siloxane, $\geq 40\%$ solids) ~45 days after placement.
- ▶ **Cure-and-Seal Blends:** These provide good curing but only moderate sealing; consider a secondary treatment for improved durability.
- ▶ **Cold-Climate Consideration:** Apply clear penetrating sealer before the first winter season to reduce scaling and spalling risk.

KEY TAKEAWAYS

- ▶ Type IL cement is not “plug-and-play” with Type I/II practices. Success depends on:
 - ▶ Adjusting mix designs
 - ▶ Monitoring finishing windows closely
 - ▶ Starting curing immediately and maintaining it diligently
 - ▶ Following with a two-step cure-and-seal approach for long-term durability
- ▶ Plan ahead, test locally, and communicate expectations with your supplier to ensure durable, trouble-free concrete.

MCA EXTERIOR CONCRETE FINISHER CERTIFICATION

CONCRETE SOLUTIONS. ENGINEERED FOR EXCELLENCE.



ABOUT THE CERTIFICATION

Improperly finished concrete leads to early deterioration, surface defects, and costly repairs.

The MCA Exterior Concrete Finisher Certification evaluates contractors on their ability to properly place, finish, and cure concrete—ensuring they meet industry standards for long-lasting, durable results.

This certification program has been developed by the MCA to test the basic knowledge on best practices for placing and finishing exterior concrete. The goal of certification is to ensure that knowledgeable contractors are selected to install exterior concrete including local roads and streets, driveways and sidewalks as well as mainline paving. This certification is designed to aid in minimizing or eliminating the potential for distresses resulting from improper installation practices. These distresses may include: scaling, plastic shrinkage cracking or random cracking.

THE CERTIFICATIONS COVERS THE FOLLOWING:

1. Concrete Required for Exterior Flatwork
2. Placing and Finishing Concrete
3. Joints
4. Curing Concrete
5. Types of Surface Problems and Causes

CERTIFICATION CRITERIA

- Attended a training course by the MCA
- Successfully completed the open book written exam with passing score of 70%
- Completed a performance evaluation during an installation of exterior concrete.

Note: The performance evaluation must be completed within 6 months of passing the written exam.

This certification is good for 5 years and applies to:

- ✓ Roads
- ✓ Sidewalks & Driveways
- ✓ Parking Lots
- ✓ Curb and Gutter



Getting your crew MCA-certified sets you apart in the market. Certified finishers deliver higher quality work with fewer callbacks, saving time and money on rework.

Certification also gives your clients confidence that your team is trained to meet Michigan's toughest exterior finishing standards—helping you win more jobs, strengthen your reputation, and build long-term customer trust



If you have questions or would like to set up a meeting with the MCA Director of Construction and Education to discuss the benefits of your crews certification please contact:

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www.miconcrete.org

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