

Guidance for Revising Concrete Specifications for Hard-Cem™ Integral Concrete Hardener

- ***Disclaimer: The suggested clauses are for guidance only. An experienced professional structural engineer should review the complete concrete specification before it is used for construction. Cementec Industries Inc. and other contributing authors do not guarantee any results on construction projects from using this guidance.***
- ***Product performance is affected by many factors including storage, method and conditions of application and use. User testing is ESSENTIAL to determine suitability of product for intended method of application and use. Seller's SOLE WARRANTY is that the product has been manufactured to specifications. No oral or written information or advice shall increase this warranty or create new warranties. Seller's SOLE LIABILITY is to replace product proved defective. In no event shall Seller be liable for any consequential, indirect or other damages whether arising from negligence or otherwise.***

This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat™*, *SectionFormat™*, and *PageFormat™*. A MANU-SPEC is manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text.

This MANU-SPEC specifies integral concrete hardener for concrete hardening, marketed under the Hard-Cem™ brand name, as manufactured by Cementec Industries Inc. Hard-Cem™ is an engineered product that provides concrete with significant increased hardness and abrasion resistance. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat™* for other section numbers and titles.

Section 03300

Cast-In-Place Concrete

PART 1 GENERAL

1.01 SUMMARY

Specifier Note: The primary application of Hard-Cem™ Integral Concrete Hardener is hardening of concrete products that are specified in other related sections, such as work of ready-mix poured/concrete batch plant application. Coordinate requirements of this section with other applications specified in other sections.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat*™ and specifier's practice.

1.02 RELATED SECTIONS

- A. Section 01352: LEED™ Requirements
- B. Section 033500: Concrete Finishing
- C. Section 033700: Concrete Curing
- D. Section 033513: High-Tolerance Concrete Floor Finishing
- E. Section 033516: Heavy-Duty Concrete Floor Finishing

1.03 SUBMITTALS

- A. LEED™ Rating System credit requirements in this section include:
 - 1. LEED™ MR Credit 4.1 Recycled Content
 - 2. LEED™ MR Credit 5.1 Regional Materials
 - 3. LEED™ EQ Credit 4.1 Low-Emitting Materials
- B. Product Data: Manufacturer's data sheets, including product specifications, test data, preparation instructions and recommendations, and storage and handling requirements.

1.04 DELIVERY, STORAGE & HANDLING

- A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers, with identification labels intact to concrete batching plant.
 - 1. Handle and store product according to Cementec Industries Inc. recommendations. Keep materials dry and in their original packaging until ready to use.

1.05 REFERENCES

- A. CSA A23.1-04, Concrete Materials and Methods of Concrete Construction

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturer: Cementec Industries Inc.
- B. Substitutions: Not permitted

2.02 MATERIALS

- A. Hard-Cem™: Integral Concrete Hardener is a dry powdered material, which is added integrally into the concrete mix during the batching process.
- B. Mixing: Mix proprietary materials in accordance with manufacturer's instructions, including product usage information.
- C. Recommended Dosage Rate: Hard-Cem™ should be added to the concrete mix during batching stage. The recommended dosage rate is 40 kg/m³. Volumetrically, the addition of 40 kg of Hard-Cem™ into a concrete mix should displace approximately 30 kg of conventional sand in the original concrete mix to maintain the design yield. Hard-Cem™ is packaged in 20 kg bags.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product usage information.

3.02 PREPARATION

- A. Concrete Batching: Add Hard-Cem™ to concrete mix at concrete batch facility.
 - 1. Refer to concrete sections for concrete mix designs.

3.03 APPLICATION

- A. Concrete Installation: Refer to Division 3 Concrete Section for placement, curing and finishing of concrete.

END OF SECTION