

**Concrete Products**  
**Technical Guide Specification**  
**Crack-Resistant Concrete Finishing System**  
**SECTION 03350**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. This section specifies synthetic fiber reinforcement and finish-enhancing, mid range water reducing admixtures to provide a plastic crack-resistant, finish-enhancing system for concrete flat slabs.
- B. Related Sections: Other specification sections which directly relate to the work of this Section include, but are not limited to, the following:
  - 1. Section 03300 - Cast-In-Place Concrete.
  - 2. Section 03365 - Post-Tensioned Concrete.
  - 3. Section 03400 - Precast Concrete.

**1.02 SUBMITTALS**

- A. Product Data: Submit manufacturer's product data, installation instructions, use limitations and recommendations for each material.
- B. Test and Performance Data: Submit independent test data substantiating fiber compliance with ASTM C 1116 as specified.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer: Concrete admixtures shall be manufactured by a firm with a minimum of 5 years experience in the production of similar products. Manufacturers proposed for use but not named in these specifications shall submit evidence of ability to meet all requirements specified, and include a list of projects of similar design and complexity completed within the past five years.
- B. Materials: For all admixtures required for the work of this Section, provide primary materials which are the products of one manufacturer.
- C. Pre-Construction Conference: A pre-construction conference shall be held two weeks prior to commencement of field operations to install the specified product in order to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include concrete admixture handling, placing, finishing, and curing.
- D. Manufacturer's Representative: A representative of the manufacturer shall be present for project start-up during initial concrete placement. Engineer may waive requirement for manufacturer's representative if Contractor provides sufficient evidence that producer and finisher have adequate experience with admixtures required.

**1.04 PROJECT CONDITIONS**

- A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials and products used.

**PART 2 - PRODUCTS****2.01 MANUFACTURER**

- A. Provide concrete admixtures by Grace Construction Products meeting specified requirements. For customer service in North America:

Call toll free: 877-4AD-MIX1 (877-423-6491)

Fax toll free: 877-4AD-MIX2 (877-423-6492)

**2.02 MATERIALS**

- A. Water Reducing Admixture: Provide water reducing admixture complying with ASTM C 494, Type A. Subject to compliance with ACI 318 "Maximum Chloride Ion Content for Corrosion Protection" requirements, provide one of the following admixtures by Grace Construction Products. Consult the local W. R. Grace representative for the use of proper product:

1. Daracem<sup>®</sup> 50 mid range water reducing admixture.
2. Daracem<sup>®</sup> 55 mid range water reducing admixture.
3. Daracem<sup>®</sup> 65 mid range water reducing admixture.
4. MIRA<sup>®</sup> 70 mid range water reducing admixture.

- B. Fiber Admixture: Provide Grace MicroFiber<sup>™</sup> concrete admixture by Grace Construction Products complying with the following requirements:

1. Fibers: 1/2" or 3/4" (13 mm or 20 mm) polypropylene fibers, maximum 3 denier complying with ASTM C 1116, Type III, Par. 4.1.3 and applicable building code requirements.
2. Fibers Per Pound: Not less than 50 million individual fibers.
3. Fibers must be provided in Concrete Ready Bags<sup>®</sup>.

**2.03 CONCRETE MIX**

- A. Air Entrainment: For freeze-thaw durability, comply with ACI 318 "Freezing and Thawing Exposures." Plastic concrete air content to be measured by ASTM C 173 or C 231.
- B. Application Rate: 1 pound per cubic yard (600 grams/m<sup>3</sup>) of concrete unless recommended otherwise by manufacturer.
- C. Concrete Fibers and Admixtures: Comply with manufacturer's recommendations for adding and mixing requirements.
- D. Addition Concrete Admixtures: Additional concrete admixtures conforming to ASTM C 494 or equivalent CSA 266 standards may be used as required including the following.
1. Type A: Water reducing admixture, WRDA<sup>®</sup> series or Daracem<sup>®</sup> 55 by Grace Construction Products.
  2. Type D: Water reducing and retarding admixture, Daratard<sup>®</sup> 17 by Grace Construction Products.
  3. Type F or G: Water reducing, high range admixture, Daracem<sup>®</sup> 19, Daracem<sup>®</sup> 100, or ADVA<sup>®</sup> Flow by Grace Construction Products. This type of admixture must be included in all Force 10,000<sup>®</sup> concrete.
  4. Type C: Accelerating admixture, PolarSet<sup>®</sup> by Grace Construction Products.

5. DCI® or DCI-S Corrosion Inhibitor by Grace Construction Products may also be used if required at rate recommended by manufacturer.

**PART 3 - EXECUTION****3.01 EXAMINATION**

- A. Examine conditions of substrates and other conditions under which work is to be performed and notify Owner, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed until unsatisfactory conditions are corrected.

**3.02 CONCRETE PLACEMENT, FINISHING AND CURING**

- A. Concrete Finishing and Curing: Comply with ACI 302 "Guide for Concrete Floor and Slab Construction" and ACI 308 "Standard Practice for Curing Concrete", ACI 305 "Hot Weather Concreting", and ACI 306 "Standard Practice for Cold Weather Concreting".

**3.03 PROTECTION**

- A. Protect completed work from damage and construction operations throughout finishing and curing operations.

**END OF SECTION**

**Visit our website at: [www.gcp-grace.com](http://www.gcp-grace.com)**

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