Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format. The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings. Delete all "Specifier Notes" when editing this section.

SECTION 03930

CONCRETE REPAIR MORTAR

Specifier Notes: This section covers Euclid "Verticoat" and "Verticoat Supreme" trowel-grade concrete repair mortars for vertical and overhead surfaces. Verticoat is a two-component, polymer-modified cement-based mortar. Verticoat Supreme is a one-component, microsilica and latex-modified cement-based mortar. Consult Euclid for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Trowel-grade concrete repair mortar for vertical and overhead surfaces.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

A. Section 03300 - Cast-in-Place Concrete.

1.3 REFERENCES

Specifier Notes: Edit the following list of references for Verticoat or Verticoat Supreme.

A. ASTM C 78 - Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).

B. ASTM C 109 - Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).

C. ASTM C 191 - Time of Setting of Hydraulic Cement by Vicat Needle.

D. ASTM C 266 - Time of Setting of Hydraulic-Cement Paste by Gillmore Needles.

E. ASTM C 348 - Flexural Strength of Hydraulic-Cement Mortars.

F. ASTM C 666 - Resistance of Concrete to Rapid Freezing and Thawing.

G. ASTM C 882 - Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.

H. ASTM C 1042 - Bond Strength of Latex Systems Used With Concrete By Slant Shear.

I. ASTM C 1059 - Latex Agents for Bonding Fresh To Hardened Concrete.

1.4 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.

B. Product Data: Submit manufacturer's product data, including surface preparation and placement instructions.

C. Manufacturer's Certification: Submit manufacturer's ISO 9001/9002 certification.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications: ISO 9001/9002 registered or provide proof of documented quality assurance system. Quality assurance system shall be registered by independent registrar accredited by ANSI Registrar Accreditation Board (ANSI-RAB) or by another internationally recognized body.

Specifier Notes: Describe requirements for a meeting to coordinate the placement of the concrete repair mortar and to sequence related work.

B. Pre-placement Meeting: Convene a pre-placement meeting [2 weeks] [_____] before start of placement of concrete repair mortar. Require attendance of parties directly affecting work of this section, including Contractor, Engineer, and manufacturer's representative. Review surface preparation, mixing, placement, finishing, curing, protection, and coordination with other work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:
1. Store materials in clean, dry area in accordance with manufacturer's instructions.
2. Keep containers sealed until ready for use.

Specifier Notes: Include the following sentence when specifying Verticoat.

3. Keep from freezing.

C. Handling: Protect materials during handling and placement to prevent damage or contamination.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Do not place concrete repair mortar when concrete surface or air temperatures are below 45 degrees F (7 degrees C).

PART 2 PRODUCTS

2.1 MANUFACTURER

A. The Euclid Chemical Company, 19218 Redwood Road, Cleveland, Ohio 44110. Toll Free (800) 321-7628. Phone (216) 531-9222. Fax (216) 531-9596. Web Site www.euclidchemical.com.

2.2 CONCRETE REPAIR MORTAR

Specifier Notes: Specify Verticoat or Verticoat Supreme concrete repair mortar.

A. Concrete Repair Mortar: Verticoat.
   1. Description: 2-component, trowel-grade, polymer-modified, cement-based mortar for vertical and overhead concrete and masonry repairs.
   2. Compliance:
      a. Bond Strength: ASTM C 1059, Type II systems.
   3. Compressive Strength, ASTM C 109, 2-Inch (50-mm) Cubes:
      a. 3 Days: 5,000 psi (35 MPa).
      b. 28 Days: 6,500 psi (45 MPa).
   4. Bond Strength, ASTM C 1042, 72 Degrees F (22 Degrees C):
      a. 1 Day: 1,120 psi (8 MPa).
      b. 14 Days: 1,760 psi (12 MPa).
   5. Flexural Strength, ASTM C 78 Modified:
      a. 7 Days: 1,500 psi (10 MPa).
   6. Freeze/Thaw Resistance, ASTM C 666, Procedure A, 500 Cycles:
      a. Relative Durability Modulus: Greater than 80 percent.
   7. Set Time, ASTM C 191, 70 Degrees F (21 Degrees C):
      a. Initial Set: 10 minutes.
      b. Final Set: 25 minutes.

B. Concrete Repair Mortar: Verticoat Supreme.
   1. Description: 1-component, trowel-grade, microsilica and latex-modified, cement-based mortar for vertical and overhead concrete and masonry repairs.
   2. Compliance:
      a. Bond Strength: ASTM C 1059, Type II systems.
   3. Compressive Strength, ASTM C 109 Modified, 2-Inch (50-mm) Cubes:
      a. 3 Days: 4,000 psi (27.6 MPa).
      b. 28 Days: 6,200 psi (42.7 MPa).
   4. Shear Bond Strength, ASTM C 882 Modified, Bond Coat:
      a. 1 Day: 1,000 psi (6.9 MPa).
      b. 28 Days: 2,100 psi (14.5 MPa).

5. Direct Tensile Bond Strength, Germann Apparatus:
   a. 1 Day: 175 psi (1.2 MPa).
   b. 28 Days: 310 psi (2.1 MPa).
6. Flexural Strength, ASTM C 348:
   a. 1 Day: 400 psi (2.8 MPa).
   b. 28 Days: 650 psi (4.5 MPa).
7. Freeze/Thaw Resistance, ASTM C 666, Procedure A, 500 Cycles:
   a. Relative Durability Modulus: 100 percent.
8. Set Time, ASTM C 266, 70 Degrees F (21 Degrees C):
   a. Initial Set: 1 hour.
   b. Final Set: 2-1/2 hours.

Specifier Notes: Include the following sentence when specifying Verticoat Supreme.

C. Water: Clean and potable.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive concrete repair mortar. Notify Engineer if surfaces are not acceptable. Do not begin surface preparation or placement until unacceptable conditions are corrected.

3.2 SURFACE PREPARATION

A. Prepare concrete surfaces in accordance with manufacturer's instructions.

B. Ensure concrete is a minimum of 3 days old.

C. Ensure concrete surfaces are clean and rough.

D. Remove dirt, dust, oil, grease, debris, paint, curing compounds, sealers, and unsound concrete.

E. Prepare surfaces mechanically to give a surface profile of a minimum of 1/8 inch (3 mm) and expose coarse aggregate.

F. Remove residue on concrete surfaces.

G. Remove loose rust and scaling on exposed reinforcement steel. Treat cleaned steel with anti-corrosion coating of Corr-Bond or Euco #452 LV Epoxy System. Apply coating in accordance with manufacturer's instructions.

Specifier Notes: Specify bond coat of Verticoat or Verticoat Supreme. Use same bond coat material as specified concrete repair mortar.

H. Prime prepared surfaces with bond coat of [Verticoat] [Verticoat Supreme] or Corr-Bond. Apply in accordance with manufacturer's instructions. Dampen concrete surfaces before application of bond coat.

3.3 MIXING

A. Mix concrete repair mortar in accordance with manufacturer's instructions.

B. Ensure materials are between 60 degrees F (16 degrees C) and 90 degrees F (32 degrees C).

3.4 PLACEMENT

A. Place concrete repair mortar in accordance with manufacturer's instructions.

B. Place mortar while bond coat is still wet.

Specifier Notes: Include the following two sentences when specifying Verticoat.

C. Place mortar in lifts 1/4 to 2 inches (6 to 50 mm) thick.

D. Place maximum thickness of 4 inches (100 mm).

Specifier Notes: Include the following sentence when specifying Verticoat Supreme.

E. Place mortar in lifts 1/4 to 2 inches (6 to 50 mm) thick.

F. Provide secure bond between lifts.

3.5 FINISHING

Specifier Notes: Edit the following sentence to provide the desired finish.

A. Finish concrete repair mortar to match surrounding concrete.

B. Do not add additional water to surface during finishing. Apply Eucobar in accordance with manufacturer's instructions if additional liquid is required.

3.6 CURING

A. Cure concrete repair mortar in accordance with manufacturer's instructions.

B. Cure with high-solids curing compound of Super Aqua-Cure VOX or Super Diamond Clear VOX. Apply in accordance with manufacturer's instructions.

C. Do not use solvent-based curing compound.

D. Apply second coat of curing compound after first coat is dry in hot, windy, or direct sunlight conditions.

Specifier Notes: Include the following sentence when specifying Verticoat Supreme.

E. Cover mortar with polyethylene sheeting for a minimum of 3 days instead of applying curing compound, if desired.

3.7 PROTECTION

A. Protect placed concrete repair mortar from freezing until minimum compressive strength of 1,000 psi (7 MPa) is reached.

B. Protect placed mortar from damage during construction.

END OF SECTION