



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 03050

BONDING AGENTS AND ADMIXTURES

Specifier Notes: This section covers Euclid “Euco Weld”, “Corr-Bond”, “Euco #352 Epoxy System”, “Euco #452 Epoxy System”, and “Euco #620 Epoxy System” bonding agents; and “Flex-Con®” and “SBR Latex” bonding admixtures. Consult Euclid for assistance in editing this section for the specific application.

Edit the section title to “Bonding Agents” or “Bonding Admixtures” if required.

PART 1 GENERAL

1.1 SECTION INCLUDES

Specifier Notes: Edit the following list as required for the project.

- A. Bonding agent.
- B. Bonding admixture.

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.
- B. Section 03930 - Concrete Repair Mortar.

1.3 REFERENCES

Specifier Notes: Include only the references used with the specified materials in PART 2 - PRODUCTS. Delete the other references.

- A. AASHTO M 235 - Epoxy Resin Adhesives.
- B. ACI 503.1 - Bonding Hardened Concrete, Steel, Wood, Brick, and Other Materials to Hardened Concrete with a Multi-Component Epoxy Adhesive.
- C. ACI 503.2 - Bonding Plastic Concrete to Hardened Concrete with a Multi-Component Epoxy Adhesive.
- D. ACI 503.3 - Producing a Skid-Resistant Surface on Concrete by the Use of a Multi-Component Epoxy System.
- E. ACI 503.4 - Repairing Concrete with Epoxy Mortars.
- F. ASTM C 881 - Epoxy-Resin-Base Bonding Systems for Concrete.
- G. ASTM C 882 - Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.
- H. ASTM C 884 - Thermal Compatibility Between Concrete and an Epoxy-Resin Overlay.
- I. ASTM C 1042 - Bond Strength of Latex Systems Used With Concrete By Slant Shear.
- J. 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 bonding materials and to sequence related work. In the last sentence of the following paragraph, add the text in brackets when specifying Flex-Con or SBR Latex.

- B. Pre-placement Meeting: Convene a pre-placement meeting [2 weeks] [_____] before start of placement of bonding materials. 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 indoors in accordance with manufacturer's instructions.
 - 2. Keep containers sealed until ready for use.

Specifier Notes: Include the following sentence when specifying Euco Weld, Corr-Bond, Flex-Con, or SBR Latex.

- 3. Keep from freezing.

Specifier Notes: Include the following sentence when specifying Euco #352 Epoxy System, Euco #452 Epoxy System, or Euco #620 Epoxy System.

- 4. Store between 45 degrees F (7 degrees C) and 110 degrees F (43 degrees C).
- C. Handling: Protect materials during handling and placement to prevent damage or contamination.

1.7 ENVIRONMENTAL REQUIREMENTS

Specifier Notes: Include the following sentence when specifying Euco Weld.

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

Specifier Notes: Include the following sentence when specifying Corr-Bond.

- B. Do not place bonding agent when concrete surface or air temperatures are below 40 degrees F (5 degrees C) or above 95 degrees F (35 degrees C).

Specifier Notes: Include the following sentence when specifying Euco #352 Epoxy System or Euco #452 Epoxy System.

- C. Do not place bonding agent when concrete surface temperature is below 40 degrees F (4 degrees C).

Specifier Notes: Include the following sentence when specifying Euco #620 Epoxy System.

- D. Do not place bonding agent when concrete surface temperature is below 32 degrees F (0 degrees C).

Specifier Notes: Include the following sentence when specifying Flex-Con.

- E. Do not place mortar with bonding admixture when concrete surface or air temperatures are below 40 degrees F (5 degrees C).

Specifier Notes: Include the following sentence when specifying SBR Latex.

- F. Do not place mortar with bonding admixture 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 BONDING AGENTS

Specifier Notes: Specify Euco Weld, Corr-Bond, Euco #352 Epoxy System, Euco #452 Epoxy System, or Euco #620 Epoxy System bonding agent.

- A. Bonding Agent: Euco Weld.
 - 1. Description: 1-component, aqueous resin adhesive of polyvinyl acetate base.
 - 2. Compliance: ASTM C 1059, Type I.
 - 3. Approval:
 - a. City of New York Board of Building Standards and Appeals Docket No. 155-60-SM.
 - b. Cleveland Board of Building Standards and Appeals.
 - 4. Bond Strength, ASTM C 1042, 14 Days: 680 psi (4.7 MPa).
- B. Bonding Agent: Corr-Bond.
 - 1. Description: 3-component, epoxy and portland cement bonding agent.
 - 2. Slant Shear Bond Strength to Concrete, ASTM C 882:
 - a. Open Time, 0 Hours: 2,000 psi (13.8 MPa).
 - b. Open Time, 12 Hours: 1,950 psi (13.4 MPa).

Specifier Notes: Specify low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #352 Epoxy System.

- C. Bonding Agent: Euco #352 Epoxy System [LV] [MV] [GEL].
 - 1. Description: 2-component, low-modulus epoxy adhesive.
 - 2. Compliance:
 - a. ASTM C 884.

Specifier Notes: Include only low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #352 Epoxy System as specified above.

- b. Euco #352 Epoxy System LV: ASTM C 881, Types I, II, IV, and V, Grade 1, Classes B, C, D, E, and F.

- c. Euco #352 Epoxy System MV: ASTM C 881, Types I, II, IV, and V, Grade 2, Classes B, C, D, E, and F.
- d. Euco #352 Epoxy System GEL: ASTM C 881, Types I, II, IV, and V, Grade 2, Classes B, C, D, E, and F.
- 3. Suitable for Use: ACI 503.1, 503.2, 503.3, and 503.4.
- 4. Approval: USDA for use in inspected facilities.

Specifier Notes: Specify low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #452 Epoxy System.

- D. Bonding Agent: Euco #452 Epoxy System [LV] [MV] [GEL].
 - 1. Description: 2-component, high-modulus epoxy adhesive.
 - 2. Compliance:
 - a. ASTM C 884.
 - b. AASHTO M 235.

Specifier Notes: Include only low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #452 Epoxy System as specified above.

- c. Euco #452 Epoxy System LV: ASTM C 881, Types I, II, IV, V, and VI, Grade 1, Classes B and C.
- d. Euco #452 Epoxy System MV: ASTM C 881, Types I, II, IV, V, and VI, Grade 2, Classes B and C.
- e. Euco #452 Epoxy System GEL: ASTM C 881, Types I, II, IV, V, and VI, Grade 3, Classes B and C.
- 3. Suitable for Use: ACI 503.1, 503.2, 503.3, and 503.4.
- 4. Approval: USDA for use in inspected facilities.

Specifier Notes: Specify low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #620 Epoxy System.

- E. Bonding Agent: Euco #620 Epoxy System [LV] [MV] [GEL].
 - 1. Description: 2-component, fast-setting, high-modulus epoxy adhesive.
 - 2. Compliance:
 - a. ASTM C 884.
 - b. AASHTO M 235.

Specifier Notes: Include low viscosity (LV), medium viscosity (MV), or gel (GEL) consistency of Euco #620 Epoxy System as specified above.

- c. Euco #620 Epoxy System LV: ASTM C 881, Types I and II, Grade 1, Classes A and C.
- d. Euco #620 Epoxy System MV: ASTM C 881, Types I and II, Grade 2, Classes A and C.
- e. Euco #620 Epoxy System GEL: ASTM C 881, Types I and II, Grade 3, Classes A and C.
- 3. Suitable for Use: ACI 503.1, 503.2, 503.3, and 503.4.
- 4. Approval: USDA for use in inspected facilities.

2.3 BONDING ADMIXTURES

Specifier Notes: Specify Flex-Con or SBR Latex bonding admixture.

Use of Flex-Con or SBR Latex bonding admixtures in conjunction with air entrained cement/concrete or with other admixtures may significantly increase total entrained air content of concrete. Testing of concrete mixes is strongly advised. Consult Euclid for additional information.

- A. Bonding Admixture: Flex-Con.
 - 1. Description: Acrylic latex bonding admixture for modifying portland cement compositions.
 - 2. Compliance: ASTM C 1059, Type II.
 - 3. Solids Content: 24 percent.

- B. Bonding Admixture: SBR Latex.
 - 1. Description: Carboxylated-styrene-butadiene copolymer latex bonding admixture for modifying portland cement compositions.
 - 2. Compliance: ASTM C 1059, Type II.
 - 3. Solids Content: 48 percent.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive [bonding agent] [mortar with bonding admixture]. 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.

Specifier Notes: Specify a minimum of 3 days for Euco Weld, Corr-Bond, Flex-Con, and SBR Latex. Specify a minimum of 28 days for Euco #352 Epoxy System, Euco #452 Epoxy System, and Euco #620 Epoxy System.

- B. Ensure concrete is a minimum of [3] [28] days old.
- C. Ensure concrete surfaces are clean and rough.
- D. Remove dirt, dust, oil, grease, debris, paint, curing compounds, sealers, form release agents, and unsound concrete.
- E. Prepare surfaces mechanically to give a surface profile in accordance with manufacturer's instructions.
- F. Remove residue on concrete surfaces.
- G. Allow concrete surfaces to dry.
- H. Do not place [bonding agent] [mortar with bonding admixture] in standing water.

3.3 MIXING

- A. Mix [bonding agent] [mortar with bonding admixture] in accordance with manufacturer's instructions.

Specifier Notes: Include the following sentence when specifying Euco Weld, Flex-Con, or SBR Latex.

- B. Ensure materials are between 40 degrees F (5 degrees C) and 90 degrees F (32 degrees C).

Specifier Notes: Include the following sentence when specifying Corr-Bond.

- C. Ensure materials are between 65 degrees F (18 degrees C) and 85 degrees F (29 degrees C).

Specifier Notes: Include the following sentence when specifying Euco #352 Epoxy System or Euco #452 Epoxy System.

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

Specifier Notes: Include the following sentence when specifying Euco #620 Epoxy System.

- E. Ensure materials are between 60 degrees F (16 degrees C) and 70 degrees F (21 degrees C).

3.4 PLACEMENT

- A. Place [bonding agent] [mortar with bonding admixture] in accordance with manufacturer's instructions.
- B. Place [bonding agent] [mortar with bonding admixture] immediately after mixing is complete.
- C. Place concrete or repair mortar over bonding agent within maximum allowable time.

Specifier Notes: Include the following FINISHING article when specifying Flex-Con or SBR Latex.

3.5 FINISHING

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

- A. Finish mortar with bonding admixture to match surrounding concrete.
- B. Do not add additional water to surfaces during finishing.
- C. Apply Eucobar in accordance with manufacturer's instructions, if additional liquid is required.

Specifier Notes: Include the following CURING article when specifying Flex-Con or SBR Latex.

3.6 CURING

- A. Cure mortar with bonding admixture in accordance with manufacturer's instructions.

- B. Maintain moist curing for 24 hours followed by use of curing compound of Diamond Clear VOX or Aqua-Cure VOX.
- C. Do not use solvent-based curing compound.

Specifier Notes: Include the following PROTECTION article when specifying Flex-Con or SBR Latex.

3.7 PROTECTION

- A. Protect placed mortar with bonding admixture from heavy traffic until material has cured.

END OF SECTION